

Tab. 96

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IMPOTENCE
AND
SEXUAL WEAKNESS
IN THE
MALE AND FEMALE.

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1893.
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DETROIT, MICH.

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THIS WORK IS DEDICATED,
AS A MARK OF FRIENDSHIP AND RESPECT, TO

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IMPOTENCE AND SEXUAL WEAKNESS IN THE MALE AND FEMALE.

Sexual weakness is an expression which conveys no clearly defined meaning; it implies that the sexual act is performed in an imperfect manner, the departure from normal being in the direction of deficiency. Under this general heading impotence would necessarily fall.

The term *impotence* implies a lack of ability to perform the sexual act. It may be partial or complete. Impotence is not necessarily associated with sterility, nor on the contrary does sterility always imply even a moderate degree of impotence. Thus, many patients who have suffered from a double obliterating epididymitis and in whose seminal discharge no spermatozoa are found, are potent to a high degree; while some patients in whom the power of erection is totally lost may be able to discharge semen swarming with apparently healthy spermatozoa.

Impotence in the male may be due to congenital or acquired deformity, or to absent or deficient erection. By far the large majority of impotent patients suffer from imperfect erection.

In so far as the purposes of the present work are

concerned, a brief consideration of the anatomy and physiology of the sexual organs is sufficient.

The spermatozoa, or life-giving elements of the semen, are secreted in the testicles, pass into the epididymis, a minute canal twenty feet in length provided with ciliated epithelium, and are carried from this tube by means of the vasa deferentia to the seminal vesicles and prostatic urethra. The vasa deferentia are about 24 inches in length, and are provided with strong muscular walls for the purpose of propelling the semen towards the urethra. External to the vas of each side, and situated between the wall of the bladder and the recto-vesical fascia, lie the seminal vesicles. These form two bulbous masses of convoluted tubes, which may be considered as diverticula from the vasa deferentia, into the lumen of which they open at the back of the prostate. By the junction of the vasa deferentia and seminal vesicles are formed the common ejaculatory ducts, each about $\frac{4}{5}$ inch in length, much narrower than either of the channels which form it, and provided with extremely thin walls. The common ducts traverse the prostate and open by slit-like orifices near the entrance of the sinus pocularis or uterns masculinus.

The urethra is a mucous canal about eight inches in length, surrounded throughout its entire length by muscular fibres and erectile tissue.

The *prostatic portion* of the urethra is that part of the canal which lies in or upon the prostate gland.

It is about an inch and a quarter long, excepting the bulb, and is the widest and most dilatable part of the entire urethra. Upon its floor there is an elevated ridge, the *veru montanum*, projecting somewhat as a cock's comb and hence called the *caput gallinaginis*; this ridge is made up of muscular and erectile tissue, and during ejaculation prevents the backward flow of the semen into the bladder. The summit of this ridge is excavated in the middle line by a pouch about two-fifths of an inch deep and extending backward through the greater thickness of the prostate gland. This pouch is called the *sinus pocularis*. The slit-like openings of the common seminal ducts are found on the *veru montanum* to the right and left of the prostatic sinus. In the furrows on either side of the *veru montanum* are found the orifices of the prostatic ducts. The prostatic urethra is surrounded by an unstriped muscular layer, further reinforced by the muscular fibres which make up the greater part of the prostate gland. The nerve supply to this portion of the urethra is peculiarly rich. The superior rectal and vesical arteries send comparatively insignificant branches to the prostate; the veins are, however, generally large and anastomose freely.

The prostatic urethra runs almost directly downward to the *membranous urethra* which passes downward and forward. This portion of the canal is about $\frac{1}{2}$ inch long, and is included between the anterior and posterior layers of the triangular ligament. It is

surrounded by a thin layer of erectile tissue and by both involuntary and voluntary muscular fibres, the latter forming the compressor urethræ muscle. The membranous urethra is, with the exception of the meatus, the narrowest and least dilatable part of the canal.

The *penile* or *spongy urethra* is six inches long and is surrounded by the erectile tissue of the spongy body. It exhibits two regions of physiological dilatation, namely, at its posterior or bulbous part, just anterior to the termination of the membranous urethra, and at its anterior part just behind the meatus, the fossa navicularis. Into the lumen of the urethra open mucous crypts, the glands of Littré, especially numerous in the pars bulbosa, and certain lacunæ, the largest one of which, termed the lacuna magna, is found in the roof of the fossa navicularis. The ducts of Cowper's glands open into the bulbous part of the urethra. These glands are each about the size of a pea and are placed beneath the membranous urethra, their ducts passing forward.

The *penis* is mainly made up of erectile tissue, which is separated by means of fibrous investments into three irregular columns: the corpus spongiosum, containing the urethra and expanding to form the glans penis, and the two corpora cavernosa, forming the body of the organ and ending at about the position of the coronary sulcus, where they are capped by the glans.

The corpora cavernosa arise from the pubic rami by strong fibrous processes called the crura, and are anchored to the pubic symphysis by a fibrous expansion termed the suspensory ligament. The crura are continued forward as two irregularly cylindrical bodies placed side by side. The walls of these bodies are made up of dense fibrous and elastic tissue. From these walls are given off many trabeculæ containing fibrous tissue and smooth muscular fibres. This gives the interior of the cavernous bodies the appearance of a sponge. Along the trabeculæ pass the arteries, which, either directly or by means of capillaries, pour their contents into the large spaces resulting from the formation of the parts. The spaces of each corpus freely communicate with the other, and in the anterior part of the penis there is only a very imperfect septum between the two cavernous bodies.

The arterial supply to this series of venous sinuses is derived from the arteries of the corpora cavernosa and from the dorsal artery of the penis. Branches from these vessels penetrate through the outer fibrous investment, pass along the trabeculæ, and either terminate as a capillary network, the branches of which open into the sinuses, or become greatly convoluted forming the helicine arteries, and supply by their capillaries the trabecular structure. The blood from the cavernous spaces is returned by veins, the greater number of which pass directly back-

wards to join the prostatic plexus, while some pass into the dorsal vein of the penis.

The *corpus spongiosum* occupies the same relation to the corpora cavernosa, as does the ram-rod to a double-barreled gun. It begins posteriorly in the bulb, a tuberos enlargement situated between the diverging crura and the corpora cavernosa, and terminates anteriorly at the glans penis. Its blood supply is derived from the arteries of the bulb.

The muscles of the penis are the erector penis, the accelerator urinæ, and the unstriped muscular tissue surrounding the urethra and found in the trabeculæ of the erectile tissue. The erector penis passes forward from the inner surface of the tuberosity of the ischium, to be inserted into the sides and under surface of the unattached part of the crus. The accelerator urinæ or bulbo-cavernous muscle arises from the central perineal tendon. Its two halves are united in a central raphe from which the fibres spread laterally, enveloping the bulb and spreading upward as a fibrous expansion over the dorsum of the penis.

The mechanism of erection. When the arteries supplying the erectile tissue of the penis are in their ordinary condition, and when the unstriped muscular fibres of the trabeculæ are in a state of tonic contraction, thus to a great extent obliterating the venous spaces, the blood in its course has no tendency to overfill these spaces, but rather passes by the ordinary system of

capillaries into the veins. Certain nerve fibres called *nervi erigentes* or *erector nerves* pass from the lower lumbar or upper sacral nerves to the vessels and muscular structure of the erectile tissue; these when stimulated cause dilatation of the arteries, hence an increased influx of blood, and relaxation of the trabecular muscles, hence lessened resistance in the venous spaces. As a result the spongy and cavernous bodies become turgid, enlarging in all directions. In consequence of the swelling, the efferent veins passing along the trabeculæ and the fibrous investment of the spongy and cavernous bodies are pressed upon, and the congestion and blood pressure in the penis is increased. The return of the blood from the penis is still further prevented by contraction of the erector penis, compressor urethræ and accelerator urinæ muscles. The penis is mechanically carried up to an elevation beyond 45° by the action of the suspensory ligament, the erector penis or ischio-cavernosi muscles being particularly concerned in maintaining venous congestion, though by drawing downward and backward at the root of the penis they undoubtedly exert a distinct effect in carrying the point of the organ upward.

The center for erection is placed in the lumbar region. Though stimulation of the erector nerves will produce a turgid condition of the penis, it will not occasion full erection, since, for the completion of the act, participation of the voluntary muscular fibres,

the ischio-cavernosi, the bulbo-cavernosi and the transversus perinei, is necessary. With all these factors working harmoniously the corpora cavernosa become of almost cartilaginous hardness. The corpus spongiosum and its expansion, the glans, remain somewhat softer, because the investing fibrous capsule is less dense. When erection is completed, the blood return from the penis may be still further obstructed by a voluntary muscular effort of the muscles of the penis and perineum, and the comparatively soft glans may be made to materially increase in size and become harder. The whole organ participates in this increase, but not to the same extent as the glans. An atonic condition of the perineal muscles prevents complete vigorous erections.

Emission. The epididymis with its coni vasculosi acts as a reservoir for the spermatozoa, which, when they fill this space, pass into the vas and are carried by the peristaltic action of the muscular coat of this tube to the vesiculæ seminales. Incident with erection the testicles are drawn close to the external rings. It is probable that the muscular coats of the vas act with more than usual vigor. As a result of the afferent impulse carried from the nerves of the glans the common ejaculatory ducts become patulous and the contents of the seminal vesicles is passed into the prostatic urethra. The muscular substance of the prostate contracts, squeezing out the secretion from its own follicles to be mixed with the sperma-

tozoa and secretion of the seminal vesicles. As a result of this contraction, and the simultaneous relaxation of the compressor urethræ, the combined secretions is forced into the bulbous urethra, since the turgid vern montanum prevents it from being forced backward into the bladder. From here it is driven forward by clonic contractions of the accelerator urinæ, aided by the entire perineal group and by the unstriped muscular fibres of the urethra. The muscular contractions pass forward as a wave and are repeated till all the semen is ejaculated. It is probable that the first voluptuous sensations are associated with the ejaculation of the semen into the prostatic urethra and the contraction of the muscular substance of this gland for the purpose of driving the semen and its secretion forward, since ejaculation does not immediately follow the first contractions.

Slightly before the orgasm Cowper's glands discharge their contents into the bulbous urethra; this act is accompanied by sensations which are usually unnoticed, since they precede the orgasm by such a slight interval that they are unnoticed or forgotten in the greater nerve impression. I have seen patients who could produce this discharge from Cowper's glands without the emission of either the prostatic or testicular secretion.

The *semen* is made up of the secretion of the testicles, the seminal vesicles, the prostate, Cowper's

glands and the urethral crypts and follicles. When first ejaculated it is a thick gray fluid with an odor somewhat like a raw potato. It shortly becomes gelatinous, but after further exposure to the air for ten to twenty minutes becomes liquid. If allowed to stand, there settles from it a white layer of spermatozoa, above which lies a gray, translucent liquid. These two layers should, according to Ultzmann, be of equal bulk in normal semen. The spermatozoa should live from twelve to twenty-four hours after the semen has been ejaculated, provided it is kept warm and has not been allowed to evaporate. In the latter case the addition of a mildly alkaline solution will often restore motion to spermatozoa which are apparently dead. When the semen is deposited in the female genitalia, spermatozoa are found living for upwards of a week. After standing for two or three days, spermatie crystals are deposited.

The amount of semen discharged as a result of one orgasm is about two drachms, though after long continence double this quantity may be ejaculated, or when repeated drains are made on the strength only a few drops may appear.

The erectile centre may be stimulated to transmit an impulse through the *nervi erigentes*, either from the brain; from direct irritation; from the spinal cord; from the prostatic urethra, or other parts of the sexual apparatus; or from the anus or other regions under the domination of an associated nerve plexus.

The centre for erection in the cord is undoubtedly under the domination of the vaso-dilator centre in the medulla oblongata, fibres within the cord making the communication. Psychological impressions have a marked influence upon the vaso-dilator nerves, a common example of this influence being offered in the flush caused by anger or shame, the dilatation of the blood-vessels of the head being due to stimulation of the vaso-dilator fibres; by a similar mechanism, when the thoughts are strongly directed towards sexual subjects, there results a powerful action upon the nervi erigentes. Thus sights, sounds, odors, memories, in fact all mental impressions which suggest sexual desire, may produce powerful erections.

As examples of erections due to direct spinal irritation, may be mentioned those which sometimes occur in the early stages of disease of the cord or those which are noted after injury. When this injury is inflicted high up, the priapism which occurs is due to a cutting off of the inhibitory fibres rather than to direct irritation of the centre.¹

¹ I have recently had under my care a young man with fracture of the spine in the dorso-lumbar region with complete paraplegia; there was partial control over the bladder and rectum. For three weeks after the injury his penis was constantly in a condition of priapism. This gradually subsided and was followed by a rather rapid atrophy of the testicles, which at the present time are no larger than those of a child of ten or twelve years, although the penis is of normal size.

Erection is excited by peripheral stimuli. Thus the priapism which sometimes occurs as the result of mechanical friction while riding horseback; the continued erections often associated with prostatic calculus or inflammation of this part of the urethra; the erections associated with full bladder, are examples of reflexes arising from the sexual organs.

Erections excited by stimulation of associated fibres are instanced by the priapism which occurs in children on examination of the hip, or the erections due to flagellation of the buttocks, or those associated with inflammatory or irritative conditions of the anus and rectum.

Before considering the question of impotence, it is well to determine what may be considered a normal amount of sexual strength. Individuals vary so in this respect that it is impossible to set a standard. Perhaps it is fair, however, to state, that a man, between his twentieth and fiftieth year, who is not overworked or unduly harassed, who is in good physical condition, and who has the proper and legitimate degree of sexual excitement, should be able to have intercourse on an average of twice a week (the act lasting from three to five minutes before ejaculation), and should not experience as an after-result a sense of fatigue or exhaustion.

It must be clearly recognized that everything which tends to lower vitality, such as anxiety, excessive work, bodily or mental, insufficient food, impaired

health, the alcoholic and tobacco habits, may render an indulgence to the extent above mentioned distinctly injurious, or even quite impossible.

Per contra, those of exceptionally vigorous constitution and particularly those who live much in the open air may quite safely far exceed the limit given. It must also be recognized, that power and desire are not always commensurate, and that, particularly in the case of brain workers, the latter is liable to be greatly in excess of the former.

The power of erection begins at birth and departs usually from the sixty-fifth to the seventieth year, though sometimes it continues much longer, there being many recorded cases of men who up to their eightieth or even ninetieth year have full powers of intercourse, and are apparently able to beget. I have seen one man, aged seventy-eight, an observer of the laws, and apparently a lover of truth, who, marrying a young woman, became in due time the father of a child. In his eightieth year he stated, that since his marriage he had performed the sexual act every night, excepting at such times as the condition of his partner made it impossible. He noticed no change in his power except for the fact that emission was delayed. I have also seen a child less than one year of age who masturbated and apparently experienced an orgasm, or at least some form of nervous crisis.

A consideration of the physiology of erection and

ejaculation suggests, as a reasonable clinical classification of the forms of impotence, the following:

1. ORGANIC IMPOTENCE.
2. PSYCHICAL IMPOTENCE.
3. ATONIC IMPOTENCE.

ORGANIC IMPOTENCE.—This form of impotence may be due to either congenital or acquired central changes affecting the cord and lumbar centres, or the afferent or efferent nerve fibres communicating with the erector centre.

In the vast majority of the cases falling under this head, impotence is due to malformation of the external genitalia. This malformation may affect the penis or the testicles, or both these organs, as in cases of hypospadia; or with perfectly healthy genital organs, malformation may affect the surrounding parts in such a way that sexual congress is impossible.

The penis may be completely absent, may exist only as a rudiment, or may be deformed.

If the penis is absent or exists only as a rudiment, the impotence is absolute and incurable.

If the organ is present and normal, excepting in regard to size, even though it is exceedingly small, the patient is not necessarily impotent. Indeed, one case is quoted by Roubaud in which an organ but two inches long and of the circumference of a quill was by a mechanical device rendered service-

able. In the case of this young man sexual congress was not followed by ejaculation, and although both desire and erection were well developed, he was able to experience emissions with their coincident sensations only by means of masturbation.

Roubaud fitted this stunted organ with a rubber cylinder the size of an ordinary penis. Into the interior of this the erect penis was introduced. The apparatus was held in place by an elastic band passing around the back. The movements of copulation, when this apparatus was in place, were sufficient to excite ejaculation. As a result of this treatment the organ increased considerably.

In Wilson's case, a man of twenty-six, whose genital organs were not more developed than those of a child of eight years, after two years of married life and physiological activity there was complete restoration to the normal size.

The practical point to be remembered in the consideration of these cases of arrested development is, that treatment may be followed by satisfactory results. The application of an apparatus which tends to produce venous congestion has in some cases, it is alleged, been followed by satisfactory results in so far as growth is concerned. Such an apparatus consists of a chamber into which the penis can be introduced, and from which the air can be partially exhausted. As a result it is claimed that an augmentation in volume takes place, which, on con-

tinuing the treatment for weeks or months, is permanent. In many cases considerable increase in the size of the organ has been noted in the first years of married life.

Enormous size of the organ sometimes renders intercourse impossible, excepting under especially favoring circumstances. For such a condition surgical treatment would scarcely be required.

Adhesions of the penis and the scrotum may occasion impotence; this is relieved only by plastic operation.

The distortion of the penis, such as is constantly found in hypospadias, that is, a downward curve, may prevent intercourse. Such distortion may also result from wounds or from the contraction of cicatrices. It may be remedied by cutting a wedge-shaped piece from the convexity of the deformed organ and apposing the raw transverse sections of the corpora cavernosa by deep sutures. Though this will straighten the organ it is very liable to interfere with perfect erection, the cavernous bodies anterior to the point of section remaining more or less flaccid while the rest of the organ is rigid.

Fibrous, cartilaginous, or gummatous indurations of the erectile tissue or the fibrous sheath of the penis may cause great distortion of the organ, and may render coitus difficult or impossible, since erection to the distal side of such indurations is exceedingly feeble. Fibrous induration is commonly found

associated with rheumatism and gout. It is not infrequent after gonorrhœa, and is by some authors ascribed to syphilis, though, excepting in the case of unmistakable gummata, this relation has been vigorously contested by Mauriac.

The treatment required is constitutional, depending upon the diathesis with which the lesion is associated. Gummatus deposits often yield to specific treatment, but the indurations associated with gonorrhœa or gout, or ascribable to no local or general cause, are exceedingly obstinate. Local treatment is of little service. Inunctions of mercury ointment should be used, however, and the beneficial resolvent effects of heat, moisture and pressure should be secured by the application of a thin rubber bandage to the penis.

Aneurismal dilatation of the corpora cavernosa, sometimes congenital, sometimes due to violence, may form a tumor which may offer mechanical obstruction to the sexual act so great as to entirely inhibit its performance.

In such cases the application of rubber supports or bandages will usually give temporary relief.

Congenitally acquired shortness of the frenum or *varix of the dorsal vein* of the penis may also cause impotence. Section of the one and excision or ligation of the other will relieve the disability.

Swellings of the external genitalia, such as is observed in elephantiasis and œdema, or enlargements

and projection of neighboring parts, as in large hernie, scrotal tumors and overhanging belly, all may occasion impotence by rendering impossible intromission of the penis, even though this organ be of good size and capable of healthy erection.

Certain malformations and diseases of the testicle also occasion impotence; in this case from lack of power to obtain erections, for the penis is at times of full size. Thus absence of the testicles, or anorchidism, is always associated with impotence. Cryptorchids, or those in whom the testicles are retained in the abdomen or groin, are usually potent, although they often are sterile. The removal of both testicles is always followed by impotence. This may not result for a number of years, Cooper quoting a case in which intercourse was practised nine years after such an operation, though there was progressive loss of sexual strength.

Destruction of the testicles as the result of inflammatory processes, is destructive of virility. Orchitis secondary to mumps very commonly goes on to the stage of atrophy. If both testicles have been involved in the process, impotence will result. The epididymitis secondary to gonorrhoeal urethritis is not an inflammation of the testicle, the secreting structure of this gland being spared; hence, even though both sides be affected by this form of inflammation, impotence will not result, though the patient may remain absolutely sterile.

Tumors, and tubercular and syphilitic infiltration of the testicle, passive congestion dependent on varicocele, when involving both testicles, are often associated with absolute impotence. Even though one testicle is involved, the other remaining healthy, the patient is frequently impotent. This is especially true of the tubercular lesions, possibly because when they appear in the testicle, they have already as a rule invaded the prostatic urethra. I have recently seen a powerful man, who, following a tubercular involvement of his right epididymis, has been impotent for 12 years. The tubercular process has become encysted; the man seems to be perfectly healthy, but he never has normal erections.

PSYCHICAL IMPOTENCE.—This form of impotence implies well formed sexual organs with full power of erection, but with this power not under the control of the will. Patients suffering from psychical impotence usually have exceedingly vigorous erections occasioned by lascivious thoughts, by a full bladder, or by any of the causes which are sufficient to excite the centre for erection. When, however, opportunity for sexual intercourse is given, there is either an imperfect erection or, in place of enlarging, the penis may actually become smaller than in its ordinary flaccid condition.

The usual cause for this is timidity, and the condition is observed in its simplest form in those whose

lives have been most chaste. The nervous, highly strung man, innocent of sexual matters, who recollects with shame and horror the period when he indulged to a greater or less extent in masturbation—shame indissolubly connected with the act; horror from the fancied consequences, which the lurid commercial literature on this subject assures him will surely follow—will experience, in addition to the perturbation incident to his new experience, the powerful anaphrodisiac of fear lest his first attempts positively demonstrate the sexual weakness begotten by his early habits.

Even without this element of fear, in those of sensitive organism, the conditions of early married life are not adapted to the fullest stimulation of the sexual instinct. Under such circumstances erections may be conspicuous by their absence. If the element of distrust and fear were absent before, after one failure it is present in full force, and is often sufficiently strong to render subsequent approach equally unsatisfactory.

Although psychical impotence is most often observed in the æsthetic recluse or the chaste farmer, those of looser morals do not always escape. The mental effect is produced somewhat as follows: After some months, or possibly years, of life about town, the youth who has heretofore stopped short of sexual congress, finally, when well under the influence of liquor, yields to temptation, but finds him-

self unable to complete the act. In this case the inhibitory influence of rum has produced a temporary condition which the patient is prone to regard as permanent, and, even should he make his next attempt under more favoring circumstances, he is liable to meet with disappointment from distrust in his powers.

Many men of lively temperament are chaste from the fear of disease, unfortunately the most potent factor in maintaining virtue. This finally gives way to a more than usually severe temptation. At the very time when such thoughts should be banished from the mind, the old fear returns with redoubled vigor, producing its characteristic physical effect, and subsequently begetting in the patient a condition of distrust as to his sexual powers, highly desirable so long as he remains single, but often so deeply rooted as to be productive of much distress should he decide to marry.

Sometimes the circumstances under which fornication is undertaken are such as to render the performance of the act difficult. Necessity for haste; fear of discovery; a dozen different causes may render the man quite unable to perform his part. One failure in men of neurotic temperament strongly predisposes to another.

In some cases remorse is sufficient to prevent erection, and to produce a profound mental impression from which the patient with difficulty rids himself;

usually, however, this emotion is not experienced till its workings are of little immediate practical value. Disgusting sights or odors have begotten a psychical impotence which has proved difficult to overcome.

I have seen patients who were so shocked by the appearance of vermin or of filth on or about the woman toward whom they made their first approaches, that passion was at once subdued, and though subsequently excited by other and more attractive objects, and under more favorable circumstances, was no longer accompanied by a satisfactory amount of power.

As an instance of some of the forms of psychical impotence the following case may be cited. A. B., an exceptionally healthy and vigorous man, aged 23, consulted me for impotence. His sexual organs were well formed; he suffered from nocturnal emissions about once in six weeks. Examination of his emission on one occasion proved it to be swarming with seemingly healthy spermatozoa. In the morning he woke with vigorous erections, and strong erections were excited by sights or stories calculated to produce this effect. On four different occasions he attempted intercourse, in each case with women of the town, and on all four occasions was entirely unable to have an erection.

This patient was advised to make no further trial until after his marriage, which was then impending, and to make no trial at intercourse for two weeks

after that date. He subsequently regained complete control of his sexual powers, although the directions in regard to his post-marital conduct were not strictly observed.

II. A. B., an unusually powerful man, much given to promiscuous fornication, was suddenly surprised when about to have sexual relations with a young woman of supposed respectability. His erection immediately subsided, and did not recur for many months. One year after, he had morning erections and occasionally those excited by mental impressions calculated to produce this effect. He has not yet, however, recovered his full sexual power, every attempt at intercourse proving abortive. The penis, in place of becoming erect, seems to shrivel to about half its normal size.

III. A. B., a strong man of 25, indulged for some years in every form of dissipation, excepting fornication. After a heavy drinking bout, he passed the night with a woman of the town. In the morning she told him that he had unsuccessfully attempted fornication. He recollected nothing of the night, but was then absolutely without erection or desire, and only anxious to escape from the house.

In thinking of the matter afterward, the statement of the woman produced a powerful impression upon his mind. He fancied that he was suffering from impotence, and to determine this question he made several trials, in each case unsuccessfully. His morn-

ing erections were powerful, his sexual apparatus perfectly healthy; and as soon as the true nature of his case was explained to him, his convalescence was rapid and complete.

There is also a form of psychical impotence, rare certainly, but none the less existing, dependent upon almost total want of desire.

For such persons women offer very slight attraction. Their erections may be normal, but the pleasure incident to sexual relation is so slight that it offers no adequate compensation for the trouble necessary to obtain it.

There are certain patients in whom the psychical impotence is relative. That is, with some women they may be exceptionally vigorous, with others their powers may be slight or altogether wanting.

It is undoubtedly true that, as a rule, educated and refined women are less passionate than men; indeed, I think this may be said of women of every degree. Their desire for sexual congress is less; and many wives, laudable in all respects, are not the sexual equals of their husbands. To such women sexual approach is sometimes a matter of total indifference; sometimes disagreeable; occasionally painful or revolting. To some men this mental attitude is sufficient to render the sexual act impossible. In addition the flabby vulva, the relaxed vagina, the passive reception of the approach, does away with the local stimulus which is such a powerful aid

to the proper completion of the sexual act. It is, unfortunately, with their legitimate partners that men are most frequently not in sexual accord.

Even though women may be well fitted to play their part in the sexual act, men will be encountered to whom intercourse is impossible save with certain individuals. Thus, I saw one patient who was never able to secure an erection except when in the company of a woman of a certain complexion and stature. He asserted that in early life he loved and intended to marry a woman of this type; none other had ever caused in him sexual excitement.

Those sexual perverts may also be considered impotent, who have no desire for the possession of women in the carnal sense, but who find their pleasure by caressing objects of women's apparel or locks of their hair; in simply looking at them and imagining the circumstances of a sexual relation. To this class would also belong men who desire their own sex, or whose desires lead them to unnatural practices with beasts.

The treatment of psychical impotence will be successful in its issue in accordance with the power of the physician to make upon the mind of the patient a strong impression. It is perfectly futile to dismiss such patients with a few words of good advice. They have suffered for months or even years from a condition which has preyed upon their minds and often has altered their entire characters. They come

with fixed beliefs; with a conviction as to the organic nature of their weakness so profound, that no argument is sufficient to shake them out of it. They are usually well assured that they are impotent on account of distinct lesion or because of the wearing out of that portion of the nervous system which presides over the function of erection and ejaculation. In the great majority of cases they attribute this to masturbation, since this is practised to a greater or less extent by nearly every boy at one time in his life. These patients usually postpone seeking advice till driven to desperation by the mental suffering which their condition entails. They consent to make what they consider their shame known on the chance that medical help may serve them. An overwrought, hysterical, hypochondrical patient is not to have his habits of thought, his profoundest convictions, brushed aside with a few words. If he is sensible he will not be content with one or two dogmatic assertions; if he is foolish he will neither understand nor remember them. He must be convinced that his case has been carefully studied, and must be made to believe that a rational and probably successful treatment has been instituted.

Before making a diagnosis as to the nature of psychical impotence, an accurate and careful history of the entire case should first be taken. This will throw much light, not only on the cause and the true nature or extent of the weakness, but will also give

the surgeon an insight into the mental processes of the patient. This history should include the patient's routine of living; the amount of exercise he takes; the regularity with which he takes his meals; the condition of his stomach and bowels; his hours of sleeping and of waking; and the presence or absence of rheumatic, gouty or scrofulous tendencies. Moreover from the history may be learned whether the patient is hereditarily neurotic; whether his sexual weakness depends upon abuse of tobacco, alcohol, or other drugs; whether it is due to general debility consequent to exposure; or to acute diseases such as diphtheria.

This should be followed by a thorough examination—not only a local examination as to the sexual weakness, but a general examination of the condition and functional activity of all the important organs of the body. The condition of the heart and lungs must be determined; functional or organic alterations of the central nervous system must be excluded; the quantity and quality of the urine must be determined; the anus should also be examined to determine the presence or absence of a cause for reflex irritation.

The penis and testicles must be examined carefully. The condition of the entire urethra is determined by means of sounds and bulbous bougies. A finger passed into the rectum can readily palpate the prostate gland, and determine the presence or absence of gross lesions.

If the case be one of entirely psychical impotence, such an inspection will show the absence of local lesions.

The examination having been completed, it is well to inform the patient that there is nothing organically wrong, that the disease is entirely curable, that he can confidently hope for restoration of his powers. It may be taken for granted that he has read to a greater or less degree the errors-of-youth and manhood-restored literature, so widely circulated by charlatans for the purpose of extorting money from this very class of patients. It is, therefore, advisable to explain the misleading nature of these writings.

These patients should always be given medicine; sometimes this medicine is of great value. Thus, examination of the urine may show the oxalic diathesis, which will be corrected by diet and by nitromuriatic acid or other appropriate remedies; or there may be great excess of uric acid, to be remedied by appropriate diet; or the bowels may be torpid, and may be stimulated to activity by the exhibition of strychnia and belladonna or other drugs; or digestion may be feeble and will be helped by pepsin and hydrochloric acid and by tonics. If there is no distinct indication for medication, a general tonic may be ordered; such as compound syrup of the hypophosphites, or compound tincture of cinchona, or wine of coca and celery.

If the patient has been recently married, it is well to tell him that a medicine will be given which will act as a powerful sexual excitant; at the same time some words of advice are offered as to the time and method of approach. Perhaps the best stimulating medication in these cases, is a pill made up of extract of damiana 2 grains, phosphorus $\frac{1}{100}$ of a grain, strychnia $\frac{1}{20}$ of a grain. This is to be administered three times a day, and an added dose may be taken at night. The patient is advised against attempting intercourse for six nights after he begins taking the medicine, and is told that when he does attempt congress, advantage should be taken of the morning erection, and the act should be instituted as promptly as possible, without preliminaries or delay of any kind.

The treatment of those who are unmarried should be conducted on somewhat different lines. Although it is true that the great majority of single men past eighteen seek and find sexual gratification, it is not a part of the physician's duty to order this as a treatment, nor do I think it is ever necessary. In such cases a general treatment, including rigorous exercise and cold bathing, should be supplemented by the passage of instruments. The introduction of the cold sound or the urethral electrode into the prostatic urethra will often be followed by immediate and vigorous erections, in themselves a source of infinite comfort to the patient, since he fancies that a response on the

part of the penis to a mechanical insult of this kind is a certain sign of pristine vigor.

These patients must be especially cautioned against trials to discover whether or not their power is restored. The women they usually seek, animated only by mercenary motives, often poorly feigning passion they never feel, are neither physically nor mentally attractive, and are ill calculated to develop power which the patient fancies he has lost. Under favorable circumstances such patients can confidently expect to find themselves completely potent; and with this assurance and with careful treatment designed to improve the general health and to create a feeling of confidence as to sexual power, the physician must rest content.

For cases of relative impotence, that is, inability to perform the sexual act with certain females, little can be done. Each individual case must be managed on its merits; in each case the physician must act wisely and for the best interests of morality; then, if his counsel and treatment accomplish no good, he is at least spared the regret of having left affairs in a worse condition than he found them. In these cases a word to the woman sometimes may be productive of good.

Stimulation of the sexual centres, either directly or by alcohol, strychnia, phosphorus, and damiana, or reflexly by cantharides, may, at times, be of temporary benefit. Rich food, pure air, and shun-

ning the society of other women for a long period, will accomplish more than any other method of treatment.

ATONIC IMPOTENCE.—This term implies such a weakening of the lumbar centres for erection and ejaculation that these functions are no longer performed in the normal manner.

This condition of the reflex centres is *usually dependent upon a hyperæmic or inflammatory condition of the prostatic urethra*. In consequence of hyperæmia and inflammation, the efferent nerves which are so richly distributed through this portion of the urethra, and particularly to the veru montanum, are hypersensitive. As a result the lumbar centres are kept in a condition of constant irritation, inevitably resulting in exhaustion, as shown by the imperfect functional performance of the parts presided over by these centres.

At times the excitability of the genito-spinal centre is abolished quite independently of any abnormal condition of the posterior urethra.

Certain general conditions, such as anæmia, either idiopathic or due to any of the various cachexias, diabetes, acute rheumatism, uræmia, colæmia, are often accompanied by loss of sexual power. Fortunately in these cases the desire fails with power.

Not infrequently after diphtheria temporary impotence may be the first sign of subsequent paralysis; sometimes it may be the only manifestation.

Many drugs, if taken until toxic effects are produced, cause complete impotence. Saturnine intoxication is frequently accompanied by anaphrodisia and impotence. Carbonic acid gas, after the immediate poisonous effects have passed off, sometimes leaves the patient in a condition of complete impotence. Fodere cites the case of a man who was unable to have connection for six months after recovery from an attack of poisoning of this kind. Bisulphide of carbon and antimony are also said to have produced anaphrodisia and loss of power in those whose work required them to breathe an atmosphere containing traces of these drugs.

Alcohol and tobacco claim the most victims. The former drug, stimulating in small doses, when long continued, destroys power and usually desire. In the case of both these drugs, the effect often long outlives the continuance of the bad habit. Months or even years may be required before power is regained.

Certain individuals exhibit an idiosyncrasy toward tobacco so that a comparatively small dose is sufficient to destroy their sexual powers, even though it produces no other appreciable injurious effect. Cigarettes, particularly when their fumes are inhaled, are credited with exercising a more sinister effect than tobacco used in other forms.

It cannot be stated as a rule that among those working in tobacco factories there is any loss of sexual power. It is believed that this is because their

life is so arranged, that more than usually favorable opportunities are offered and possibly an artificial stimulus provided. This very fact would, however, make more apparent failing sexual power. Certain individuals in such factories will, however, seek advice on account of impotence, and in them it is always possible that their malady may be due to idiosyncrasy toward this powerful drug.

Trousseau says that coffee is a powerful anaphrodisiac, and of itself is able to produce complete impotence. It is quite certain that this drug taken in enormous doses may produce such an effect, but rather because of the general nervous break-down it produces than from any direct effect upon the sexual organs. In ordinary doses, that is, one or two cups a day, and to those who exhibit no idiosyncrasy, the effect of this drug is rather stimulating.

Many drugs when given in physiological doses will temporarily lessen sexual power. Among these the bromides are particularly potent, and cocaine is also stated to possess this power. Morphia in full doses is operative only in certain individuals. Like tobacco, when used habitually and to excess it abolishes both desire and power.

The treatment of impotence dependent upon general conditions, such as post-pyrexial adynamia, anæmia or toxæmia, must be conducted on general principles. When the general health is restored the sexual impotence will disappear. Drug impotence will

be cured when the cause producing it is removed; but the restoration in these cases may be very slow.

Atonic impotence may be classified in accordance with its clinical symptoms as follows :

1. *Irritative form.* Erections may be complete; they are often imperfect. Emissions are always premature, often occurring immediately on contact. The sexual desire is usually strong.

2. *The paralytic form.* Erections are absent, or at the most are extremely feeble; desire is wanting; ejaculation occurs with little or no pleasure, semen dropping from the flaccid penis.

The irritative form of impotence, *i. e.*, that characterized by premature ejaculation, with or without feeble erection, is by far the most frequent. The cause of this form of impotence is nearly always a diseased condition of the prostatic urethra, the mucous membrane being either hyperæmic or actually inflamed. This condition of the prostatic urethra may depend upon a number of causes. Among these may be mentioned the following: (1) Gonorrhœal inflammation and its sequel, stricture; (2) Prolonged and ungratified sexual excitement; (3) Excessive venery; (4) Strongly acid or irritating conditions of the urine.

Of these causes *gonorrhœal inflammation* with its commonest sequel, stricture, is by far the most frequent. After this would be placed in order of impor-

tance, excessive venery, including under this heading onanism; prolonged and ungratified sexual excitement, the victims from this coming mostly from country regions; and, finally, irritation from the urine.

Atonic impotence from gonorrhœal inflammation.—Acute gonorrhœa commonly involves the prostatic urethra, but subsides promptly and completely. In a certain percentage of cases the prostatic urethra becomes acutely inflamed, producing symptoms quite as distressing as those which accompany inflammation of the anterior portion of this tube. In addition to urgency and frequency of urination, there is often distressing tenesmus, and a few drops of blood will be discharged at the end of each act of micturition. These symptoms subside in a few days, but continue with more or less severity for some months, being awakened to new activity from time to time by exposure to cold, indulgence in alcohol, sexual excesses, or other imprudence. The discharge from the penis ceases entirely between apparent relapses; the patient regards himself as cured, and suffers only from increased frequency of urination and an occasional subacute attack of what he is usually told is cystitis. Examination of the urine will show, however, that pus is always present.

As a consequence of this long-continued irritation, the mucous membrane of the prostate undergoes the

changes characteristic of chronic catarrh. The terminal sensory nerve filaments are involved, and reflexly keep the centres for erection and ejaculation in a condition of hyperæsthesia. Frequently this chronic catarrh runs on to a condition called prostatictorrhœa. In this case the patient complains of discharge of prostatic fluid during defecation, after urination, and during erection, when sufficient stimulus for ejaculation is not applied.

Chronic inflammation of the prostatic urethra may be kept alive by simple persistence of gonorrhœal inflammation, or perhaps more frequently by the formation of a stricture in the membranous or posterior portion of the penile urethra. The relation of stricture to impotence has been well shown by many reported cases. The mechanical obstruction offered by stricture even of large calibre, is sufficient to indefinitely prolong an inflammation behind the point of narrowing, when this has once started.

Atonic impotence from sexual excess is probably more frequent than the histories of cases would lead the surgeon to infer. This is because men and boys are notoriously untruthful in regard to the amount of their sexual indulgence. Some, and usually those with the smallest powers, and who exhibit these powers most moderately, narrate experiences before which the records of the wildest satyriasis pale. Others cursed with violent and unchecked passions, are, according to their accounts, moderate to an extreme.

It is particularly in those who practise self-abuse that the form of impotence due to sexual excess is found. With these unfortunate patients, an admission as to the extent to which they yield to temptation is almost never obtainable. In a fairly extended experience I have known of but one instance where the patient frankly acknowledged that he still continued the habit and was unable to conquer it.

The question has often been raised as to whether masturbation affects the general system more injuriously than sexual intercourse, if both be practised to the same extent. This is a difficult question to answer, since the conditions of comparison are practically impossible of fulfilment. There is a widespread belief not only in the community, but among the doctors, as to the disastrous effects produced by masturbation *per se*. There is a constant tendency to refer back to this practice many or all of the ills which arise during the course of a lifetime. Diseases of the genito-urinary organs are peculiarly liable to be considered as dependent upon onanism—justly in some cases, no doubt. Hence, while the number of people who attribute their ills to masturbation is legion, those who complain of the results of excessive sexual gratification are comparatively few. Immoderate indulgence in sexual intercourse requires the consent of another person, and, as a matter of fact, marks for its victims, at least in so far as immediate consequences are concerned, a comparatively small number of patients.

The excesses of the libertine are usually paroxysmal, and are associated with inordinate use of stimulants, the general effect of which quite overshadows the results from undue sexual activity. Among the men-about-town impotence is rare, except that form resulting from gonorrhœal inflammation and its results. Occasionally, however, after an unusually prolonged debauch, patients will appear complaining of feeble or absent erections. It is always a question in these cases as to whether this is the result of tobacco and rum, or is due to sexual excess.

The ultimate effect of sexual excess seems to be the institution of certain sclerotic changes in the cord, resulting in locomotor ataxia and kindred disorders. When these changes occur, impotence shortly becomes complete.

The following is a typical case of temporary impotence from over-activity.

A. B., aged 30; married ten months; had syphilis; never suffered from gonorrhœa; masturbated moderately when a boy; was never excessive in venery afterward; sexual functions performed normally; did not suffer from any signs of vesical irritability. The patient's wife was of an exceedingly passionate disposition. During the ten months of his married life, with the exception of intervals of two or three days, twice a month, when he was called out of town, he was required to perform the sexual act two or three times every night. In the last month he was troubled with

frequent urination and some urgency; with imperfect erections; with premature ejaculations; and immediate subsidence of erection after this. At the same time he lost twenty pounds in weight; suffered from headache; vertigo; palpitation; some dyspeptic symptoms; constipation and a feeling of lassitude. He was excessively nervous, so that the slightest sound would make him start violently; he had become petulant, morose, and had his mind almost constantly turned on sexual subjects. He was not able to concentrate his attention on business matters; was restless and exceedingly disturbed over his loss of power. After two months of moderation his health was completely restored.

Masturbation may be learned at a very early age. I have seen one child, nine months old, who to all appearances practised onanism. Children of two or three years either learn it themselves or are taught the practice by their elders; sometimes by nurses who find that fingering the genitals is an efficient method of keeping a baby quiet. It is generally believed that masturbation is one of the evils incident to school life. Many of the young men whom I have questioned on this subject state that they discovered themselves the pleasurable sensations which could be obtained by friction; sometimes the first stimulus was provided by horseback riding, or sliding down banisters, or often from handling of the penis induced by the itching occasioned by a mild balan-

posthitis. Once learned, the habit is liable to be continued with an instinctive knowledge that concealment is necessary, until the boy is clearly made to understand that he is doing himself a permanent injury. Many medical students have stated that not until they began their professional reading did they learn that the practice in which they indulged was injurious. The effect produced varies greatly in individual cases. I have seen men who stated that from their fifth to the eighteenth year they masturbated almost constantly—that is, several times a week—and yet who experienced no ill effects from it. Ordinarily where indulgence is excessive, the general symptoms are sufficiently well marked.

The local symptoms, in the period of boyhood at least, excite neither attention nor anxiety. It is commonly taught that the masturbator may be known by certain peculiarities. Thus he is given a low, mean look, a hang-dog expression; a pallid face; hollow, watery eyes; cold, moist hands; lustreless hair; constrained, embarrassed manner; drooping shoulders; a tendency toward twitching the muscles; frequent repetition of swallowing motions on being addressed; weak knees; shrunken sexual organs; a timid, solitary, irritable disposition; is supposed to be uncleanly in his habits; averse to all society, particularly to that of girls; and incapable of intellectual effort. This description is no doubt true in certain extreme cases, but the absence of any or all of these features

will not exclude the fact of this habit being practised, and to considerable excess. Some of the frankest, manliest and apparently healthiest boys I have seen, indulged without stint in this practice, taught their comrades with open-hearted generosity, delighted in the presence of the opposite sex, and showed in their expression and bearing self-respect and innocent joy in life.

As a typical instance of aggravated impotence directly traceable to masturbation, the following may be narrated.

M. R., aged 26, a mechanic, was always healthy, with the exception of convulsions, from which he was said to suffer as a child; until his eighteenth year he never practised masturbation. He then discovered that pleasurable sensations could be produced by local friction, and practised onanism several times a day for one year. Learning that it was doing him an injury, he stopped the practice as far as he was able, but was not sufficiently resolved to give it up entirely. Up to his eighteenth year he had been strong and well, had morning erections, and on two occasions had been able to perform the sexual act successfully. He was small in size, with cold, clammy hands; sunken, dark-ringed eyes avoiding the gaze of his interlocutor and watering freely; muddy, pimply, flabby face; dry, brittle, unkempt hair; scraggy neck, with prominent Adam's-apple which rose and fell in a distressing manner whenever he was addressed or

attempted to speak. His gait was slouching; he was uncertain, hesitating and timid in speech, with the words imperfectly pronounced, and sentences half spoken; and he twisted uneasily while sitting, or supported himself while standing up, and nervously shuffled his feet. From his incoherent speech I gathered the history I have given and also the facts that his memory was gone; that he was unable to concentrate his attention upon any occupation; that he suffered from pains in the back, running down along the anterior and inner surfaces of the leg; that he passed water frequently, and often had to hurry; that he had pollutions once or twice a week. Within the last few years he had occasionally feeble morning erections. He was tortured with inordinate sexual desires, but on the first sexual contact instantly ejaculated, often without erection, or even without voluptuous sensation, and was quite unable to complete the sexual act.

Examination of his sexual organs showed that they were not more developed than those of a boy of twelve or fourteen years; the penis was two inches in circumference, about two inches in length, and the testicles were correspondingly small. Beyond this there was no apparent abnormality. The meatus was small, but on dividing it a 28 sound passed in readily, occasioning great anguish when it reached the prostatic urethra. The patient was in despair over his condition, and was suffering from all the

reflex urethral symptoms of which these cases complain.

As a result of some weeks treatment, he returned greatly improved in general health, and with partial restoration of the power of erection. I have every reason to believe that this patient during his treatment steadily continued to masturbate and that his ultimate cure was prevented (for I did not succeed in curing him beyond the point mentioned) by the continuance of this habit.

Atonic impotence from prolonged and ungratified sexual desire. Those who suffer from this form of impotence are by no means the full-blooded passionate men, who either from necessity or from strength of purpose, are debarred from sexual indulgence. For instance, sailors who spend months or even years in places where woman is unknown, are not troubled with sexual weakness when opportunity for indulgence is afforded. Nor are the robust men of the cities whose minds and bodies are healthfully occupied, frequently troubled with this form of impotence. The sufferers from prolonged excitement are rather those of a neurotic tendency whose thoughts habitually dwell on sexual pleasures, who are given to fondling women without violating the written law, or to onanism not carried to the point of ejaculation, whose occupation is neither mentally engrossing nor physically fatiguing. Thus I have most frequently seen young farmers troubled with impo-

tence from this cause. Commonly it develops into a condition of prostatorrhœa, which exceptionally runs on to spermatorrhœa, and finally complete paralytic impotence with profound deterioration of moral fibre. Such a result is rarely produced by an excitement prolonged through days, or even weeks and months. It often takes years to produce appreciable effects. The following case is fairly typical of its class.

A. B., a healthy, ruddy, prosperous young farmer of twenty-six, since his sixteenth year was much given to fondling women. For several years, during some part of every day he was subjected to pronounced sexual excitement. In his twentieth year his nocturnal emissions became more frequent than before, averaging about once a week. Two years later the patient found that the cerebral excitement incident to ordinary endearments excited emission. These emissions recurred with greater facility, but gave him no concern till the time of his marriage, when he attempted coitus for the first time in his life. Emission took place before intromission, and this distressing hypersensitiveness continued in spite of the strongest efforts of the will. General hygienic treatment and a course of posterior instillations resulted in complete cure.

A more serious case is the following :

A. B., a well-to-do farmer of twenty-two, has always been neurotic and somewhat solitary in his hab-

its. In his fourteenth year, he masturbated once, profiting by the verbal instructions of a friend. Fortunately he was detected in the act, and was admonished by rod and tongue to such purpose that he never repeated it. During his childhood and youth he brooded almost constantly on sexual subjects; sights such as the mating of birds, or the congress of animals, threw him into a condition of erotic excitement which rendered him sleepless at night and unfit for his work for days. At such times he would have repeated and painful erections, would suffer from testicular pains, backache, and nocturnal emissions.

In his sixteenth year he was thrown much in the company of a young woman, with whom the circumstances of country life left him alone, and whom he caressed on every opportunity, confining himself within the limits of decency. As a result his previous suffering became augmented, and his nocturnal pollutions were more frequent, averaging two or three in the week. He finally suffered from daily pollutions, at first after more than usually prolonged excitement and as the result of some slight mechanical friction. These emissions were excited more and more readily till finally they would take place before the penis became fully erect and on the slightest psychical or physical excitement. In his twentieth year he eschewed the company of women, but the sexual weakness steadily became more aggravated. The jolting of a wagon or of a mowing

machine would cause feeble erection and emission, sometimes repeated two or three times a day. A well marked condition of prostaticorrhœa was developed, and on approaching a female the semen flowed out without the slightest sign of erection, and with only very feeble pleasurable sensations. The mental condition of the patient was deplorable; he had lost twenty pounds in weight, suffered from headache, giddiness, from palpitation, heart-burn, weak back, pains particularly severe in the hypogastric region and the right hip, and had become so desperate and despondent that he was prepared for any measure which would give him relief. He begged to have his testicles removed, and indeed was quite determined to perform this operation himself if the surgeon refused to perform it.

Treatment by dividing a narrow meatus, passing full-sized sounds, dilating the prostatic urethra once up to 40 F., and making instillations of copper sulphate 5 per cent. into the posterior urethra, produced such a change in this man's condition that he became active in all social affairs of the country side, ceased to be troubled by diurnal pollutions, and had nocturnal emissions not more frequently than was normal. He experienced vigorous morning erections, absent for more than two years, and regarded himself as cured.

The treatment of impotence dependent upon prolonged and ungratified sexual excitement must be

based on the avoidance of all that tends to produce such excitement. This end is not always accomplished simply by forbidding association with women. There is in the majority of these patients a mental perversion, a persistent dwelling on sexual subjects, which in itself is sufficient to produce local congestions. In such cases the patient must be urged to use all his strength of will to overcome this tendency. He should be advised to seek an occupation which will keep him actively employed both mentally and physically. If such occupation is purely mental it must be supplemented by gymnastic exercises. He should be encouraged to spend his leisure time in certain lines of study, should be directed to exercise vigorously for 15 minutes and take a cool sponge bath before retiring, and should begin the day with a ten-minute course of calisthenics, followed by a cold plunge bath or shower bath.

This part of the treatment, by far the most important, depends entirely upon the strength of purpose exhibited by the patient. To advise such a patient to give his passions full swing is, even from a therapeutic standpoint, distinctly objectionable, since he is liable to exhibit some weakness in his first essays, and, as a result of failure, will have added to his original functional deficiency psychical impotence, making his ultimate cure much more difficult.

While the patient is devoting his energies to avoid-

ing causes of excitement and diverting his mind from sexual subjects, the hypersensitive posterior urethra should receive the treatment appropriate to these cases; the cold sound, the psychrophor, the prostatic dilator, or posterior instillation, being employed in accordance with the severity of the local changes which have resulted from frequently repeated, long-continued congestions.

Impotence associated with abnormal conditions of the urine. It seems reasonable to suppose that the hyperæsthetic condition of the posterior urethra, which is the cause of nearly all cases of atonic impotence, may be occasioned by the irritation incident to the passage of urine, which, from the fact that it is strongly acid or otherwise abnormal, acts to a greater or less extent as an irritant to the mucous membrane. It is, however, impossible positively to decide whether or not the impotence may not be dependent on the general causes which induce an abnormal condition of the urine, rather than on the direct irritating effects of this fluid, since in diabetes, where impotence is often absolute, and in Bright's disease, there is not necessarily the slightest sign of local hyperæmia, nor does the introduction of an instrument occasion any undue suffering.

I have, however, repeatedly seen men with oxaluria, who suffered from all the local and reflex signs of posterior urethritis associated with impotence, and whose cure followed hard upon the disappearance of

the oxaluria. Again, in the uric acid diathesis impotence associated with signs of urethral irritation, is not infrequently noted, and is usually cured by general treatment. The strongly acid urine of acute ephemeral fevers occasionally produces distressing priapism from its stimulating effect on the posterior urethra, and it is reasonable to suppose that when such irritation is long continued atonic impotence will result.

Under the title *Genito-urinary neuroses* Ultzmann has admirably described the reflex nervous symptoms incident to hyperæmia, or a chronically inflamed condition of the prostatic urethra.

In men the bladder, seminal vesicles and prostate are supplied from the vesical plexus, which in turn, is made up of anastomosing branches from the hypogastric plexus of the sympathetic together with filaments from the sacral ganglia, and from the pudendal plexus of the sacral nerves. This nerve supply explains why a constant irritation of the prostatic urethra should excite such reflexes as pain passing down the inner surfaces of the thighs, or referred to the hips, to the anus, to the hypogastric region, or to the small of the back. Indeed, all the general and local symptoms observed in a hysterical woman, the subject of a chronic inflammation of the uterus, are duplicated in men, the subjects of chronic catarrh of the prostatic urethra, since both the uterus and the prostate are richly supplied from the same nerve plexus.

The urine, in these cases, is often very abundant, and of low specific gravity. Sometimes the polyuria is associated with a transient glycosuria. At times the urine when secreted is alkaline, dependent not upon carbonate of ammonia, but usually upon the presence of carbonate of soda. This urine on heating becomes turbid from precipitation of the earthy phosphates.

Indican is occasionally observed in the urine of masturbators, or of those who have indulged in excessive venery. A transient albuminuria is also noted at times.

Oxalate of lime frequently appears in great excess; also the amorphous and crystalline salts of lime and magnesia. Spermatozoa are also found singly in the field of the microscope.

The *sensory neuroses* of the sexual system may be confined to sensations like those produced by fluid running through the urethra, though there is not the slightest sign of discharge, or to neuralgic pains referred to the testicles, anus, groins or any of the regions innervated by branches communicating with the hypogastric and sacral plexus. This hyperæsthesia is sometimes manifested by a sensation of severe burning in the region of the meatus after ejaculation.

Rarely anæsthetic phenomena are observed; the penis seems cold and shrivelled; it is sometimes non-sensitive to such a degree that the mechanical stimulus of coitus is scarcely sufficient to excite ejaculation;

even application of the electric brush does not cause pain. The urethra shares in this anæsthesia, so that a sound may be passed into the bladder without exciting discomfort. Usually the urethra is markedly hyperæsthetic, the passage of an instrument causing almost unbearable anguish.

The motor neuroses of the urinary and genital system may appear in the form of over-action or paralysis. Thus there is sometimes observed dribbling of urine after micturition from spasmodic contraction of the smooth circular muscles of the urethra. Passage of bougies in such cases proves the absence of strictures.

At times there is spasm of the external bladder sphincter. In such cases, there is great difficulty in starting the act of micturition; the first flow comes in drops, or the stream is suddenly interrupted, and at the end of the act there is dribbling. At times the urine can not be passed, and retention must be relieved by the administration of anodynes and anti-spasmodics, or by the passage of a catheter.

True cystospasm, that is spasm of the detrusor bladder muscles, is much more common than spasm of the sphincters. When the detrusor muscles are involved, the patient has difficulty in retaining the water, is compelled to urinate frequently. Usually there is no pain associated with this frequent urination. This motor neurosis is a very frequent accompaniment of catarrhal conditions of the prostatic urethra.

Paresis of the sphincters, or of the detrusor muscles of the bladder, is exceedingly rare. When the sphincters are involved, incontinence results; when the detrusors are at fault, the patient suffers from retention.

The motor neuroses of the sexual system may be manifested in the forms of priapism, or partial or complete impotence, often associated with involuntary seminal emissions and spermatorrhœa.

Priapism is rarely observed except in the very early stages of acute inflammatory involvement of the prostatic urethra. Thus in acute posterior urethritis, in certain cases of prostatic calculus, or of growths in that region, there may be repeated and prolonged erection, sometimes associated with pollutions.

Impotence is commonly observed as a result of chronic inflammation of the posterior urethra. The pollutions with which it is associated are due to spasm of the detrusors of the seminal vesicles, while spermatorrhœa or dribbling of the semen without erection or voluptuous sensation is due to paresis of the muscular fibres of the ejaculatory ducts.

The *secretory* neuroses of the genital system are manifested in the form of *polyspermia*, *aspermia* and *prostatorrhœa*.

Polyspermia implies the ejaculation of an abnormal quantity of semen; *aspermia*, the absence of semen; *prostatorrhœa*, a hypersecretion from the prostatic

glands, the glands of Cowper, and the urethral crypts and follicles. The great bulk of this hypersecretion is contributed by the prostate.

In addition to these local neuroses, there is commonly in these cases of urethral irritation a profound constitutional involvement; there is muscular weakness, anæmia, dyspepsia, palpitation, asthma, constipation. There are also *psychical* changes; the patients become timid, morose, solitary, hypochondriacal. The slightest excitement throws them into a state of profound agitation. No diversion is sufficient to lift even for a moment the pall of despondency which settles over them. I believe that the cause of many an unexplained suicide could be found on examination of the posterior urethra.

The diagnosis of atonic impotence.—To determine whether or not a given case of impotence is due to psychical influences, to organic changes in the central nervous system, or to exhaustion of the erector and ejaculator centres, the main dependence must be placed upon the history of the case. All venereal troubles seem to exert more or less of an inhibitory influence upon the truth centres, if such exist. Hence in every history allowance must be made. The physician should, however, be careful not to be misled by a skepticism so absolute that the improbable is not given close consideration.

After a careful review of the history, a thorough

examination must be made. This will include the condition of the circulatory, respiratory and central nervous systems. The urine must be examined, and in some cases the eye-ground carefully inspected. In all cases of impotence a thorough examination of the rectum must be made, since reflex impotence from fissure, seat-worms or hemorrhoids is by no means unknown. Examination of the urine is particularly important. Not only must the surgeon know the total quantity passed during the day, but its specific gravity; its acid, neutral or alkaline reaction; the presence or absence of the earthy phosphates; of oxalates; of uric acid or excess of urates; of indican, sugar and albumen. He must carefully search for traces of inflammation in the prostatic urethra, and if he finds pus, probably from this source, he must discover whether it is due simply to the ordinary microbes of suppuration or is associated with a still active gonorrhœal inflammation.

To determine from which part of the urethra pus is secreted, the surgeon should pass a small, soft rubber catheter into the urethra as far as the compressor urethræ muscle, then by means of an irrigating bag filled with a mild antiseptic solution, such as 4-per-cent. boric acid, the whole anterior urethra should be well flushed out. The patient is now directed to pass his urine into three perfectly clean glasses. The first glass receives the first ounce; the second glass receives all but the last half-ounce; the last glass

receives the water from the final straining efforts to evacuate the bladder. If pus is contained in the first glass and the contents of the others is clear, there is probably present a moderate catarrhal condition of the prostatic urethra, the secretion not being sufficient to overfill this part of the tube and flow back into the bladder. If all three portions contain pus, there is a free discharge which fills the prostatic urethra in the intervals of micturition and flows back into the bladder. If the first and last alone contain pus, there is marked involvement of the prostatic sinuses, the contents of which are squeezed out by the last act of micturition. Where there is a probability of involvement of the bladder in inflammation, the presence of pus in the second and third glasses has not exactly the same significance.

Finally comes the examination of the sexual organs. The condition of the testicles must be noted, their size, position, consistency, sensitiveness, and the presence or absence of inflammatory swellings, or new growths. The development of the penis is next considered. It is palpated to discover whether indurations are present along the course of the urethra, or in the cavernous bodies. The prepuce is examined as to whether it is redundant or too tight. The condition of the lips of the meatus is noted and the measurement of the circumference of the penis just behind the corona is made. On an average this will be from three to three and a half inches. This

measurement gives us a fairly good gauge as to what should be the normal calibre of the urethra. The urethra of a penis measuring three inches in circumference should easily take a No. 30 sound. Each one-quarter of an inch added to the circumference of the penis should indicate a sound two numbers larger. Thus a penis three and a quarter inches in circumference should take a sound No. 32. In cases of impotence will sometimes be found a penis not more than two or two and a half inches in circumference. The urethra in these small organs should, however, take a No. 26 to 28 sound, since the shrinkage is usually in the unstriped muscular fibres of the erectile tissue.

Having determined the normal calibre of the urethra, the glans penis is carefully cleansed with a mild antiseptic (a pledget of cotton taken from a solution of $\frac{1}{1000}$ bichloride), and a sterile bulbous bougie four sizes smaller than the normal calibre,



FIG. 9.—Bulbous Bougie.

should be lubricated with albolene or a mixture made up of glycerine, 100 parts; boric acid, 4 parts; carbolic acid, 1 part, and gently introduced into the bladder. About six inches from the meatus the involuntary contraction of the compressor urethræ muscle will stop its further passage for a moment.

By continued gentle pressure, and particularly by directing the patient to make efforts at micturition, the spasm will yield and the instrument will pass into the bladder, stopping for a moment, perhaps, at the internal sphincter, that is, the layer of involuntary muscular fibres surrounding the neck of the bladder to the inner side of the prostate. The instrument should then be slowly withdrawn. During the introduction and withdrawal of the bougie, the physician should note points of resistance to its progress, and should look for areas of unusual tenderness. On withdrawal, the shoulder of the bulb should be inspected for pus, blood or mucus.

A stricture will be detected either by failure of the large bulb to pass in, or by its being resisted for a moment and then jumping past the obstacle. On withdrawal, the square shoulder of the bulb catches in a more pronounced way. Failure to pass the first bulb should be followed by efforts to pass successively smaller bulbs, unless the resistance be due to the spasmodic contraction of the compressor urethræ muscle. This is encountered about six inches from the meatus; it yields to gentle continued pressure, aided by efforts on the part of the patient to urinate, in virtue of which the compressor urethræ is relaxed; or, if it still resists the bulbous bougie, it can be passed readily by means of a full sized steel sound. J. William White has shown that on withdrawal of the bulbous bougie, the resistance of the posterior

layer of the triangular ligament will, in a perfectly normal urethra, give the sensation of a slight stricture. This resistance will be encountered about $6\frac{3}{4}$ inches from the meatus. Knowledge of this fact will prevent the surgeon from diagnosing stricture in cases where the urethra is normal.

Personally I have never seen a stricture due to onanism, and have seen only one congenital narrowing of the urethra unassociated with other deformities of the parts. This is, of course, setting aside the narrowing which is frequently observed about the meatus.

It may be found that the meatus or the urethra just behind it is congenitally so narrow that it will not admit a bougie sufficiently large to detect a large calibre stricture (over 16 French), even if one is present. In such cases there should be no hesitation in performing a meatotomy.

By means of a 10 per cent. solution of cocaine the area of operation, although it is exquisitely sensitive, may be rendered absolutely anæsthetic. Cocaine is applied by means of pledgets of cotton wrapped on applicators (an ordinary match stick answers well). This pledget is dipped into the cocaine solution, is then introduced into the urethra to the depth of $1\frac{1}{2}$ inches. The cocaine is allowed to remain for three minutes, is withdrawn and another pledget inserted. The surgeon then enlarges the opening by means of a blunt pointed tenotome curved on its convex cutting

edge. The incision should be downward and directly in the middle line of the frænum. Under exceptional circumstances when the tissues in this direction are unusually thin, part of the cutting may be done upon the upper surface of the urethra. This cutting should be so free that a bulbous bougie two sizes larger than the normal calibre of the urethra can be entered and withdrawn without meeting with abnormal resistance. The patient is then given a conical meatus bougie and a 10 per cent. solution of cocaine. He is instructed to cocainize the site of operation immediately before each act of micturition; and to insert the meatus bougie once a day for two weeks, employing cocaine before its introduction, using albolene as a lubricant and keeping his instrument as nearly sterile as possible.

I have seen this operation completely relieve vesical irritability and partial impotence from which the patient suffered for many months. It is possible, however, that it acted as much by the mental impression it produced, as by any direct beneficial effect upon the posterior urethra and indirectly the lumbar centres. After division of the meatus, either a bulbous bougie four sizes smaller than the calibre of the urethra, or a full sized cylindrical sound should be introduced into the bladder. A cylindrical sound will determine the presence of a stricture almost as well as a bulbous bougie; it causes less pain than the latter, and allows the surgeon to accurately determine the amount of hyperæsthesia present in the posterior urethra.

Examination of the urethra with a urethroscope should be employed when there are diseased areas in the anterior urethra. The introduction of a straight endoscopic tube into the bladder inevitably occasions some contusion of the prostatic urethra. The information gathered from inspection of this part is rarely more valuable than that obtained by exploring instruments, which occasion less local injury. The only case of epididymitis I have ever had the misfortune to occasion by the passage of instruments was due to the introduction of a tube of the Leiter urethroscope.

An examination thus conducted, will show the presence or absence of pathological conditions which may reflexly produce a hyperæsthetic and finally an adynamic condition of the lumbar centres. In the vast majority of cases this reflex will start from the vesico-prostatic plexus of nerves, a chronic posterior urethritis being kept up by stricture or by the persistence of a gonorrhœal inflammation.

Although examination of cases of atonic impotence usually shows a hyperæsthetic condition of the urethra, in certain cases, particularly in those associated with prostatorrhœa and complete impotence, the whole urethra becomes absolutely insensitive, so that the passage of an instrument gives rise to no suffering. This represents the most advanced and most hopeless form of impotence.

The prognosis of atonic impotence is good, except-

ing in the most advanced cases. Frequently, dilatation of a stricture, and restoration of the urethra to its normal calibre, will be found sufficient to produce a cure. Generally the hyperæmia or inflammation of the prostatic urethra must be subdued by direct local treatment.

In the cases suffering from premature ejaculation, even though this be associated with imperfect erections, the outlook is generally favorable, especially, when distinct lesions are found sufficient to cause such functional disturbances. In more advanced cases, where connection is impossible owing to deficient or absent erections, if such patients have voluptuous dreams with erections and emissions, and have occasionally vigorous morning erections, the outlook is fairly satisfactory, but sometimes a cure is extremely difficult to accomplish, since here there is a distinct psychical element added to the atonic impotence.

In the paralytic form of the trouble when sexual desire is absent, when emissions occur without pleasure and without erections, the prognosis must be extremely guarded, though even in some of these cases persistence in rational treatment will bring about a cure.

TREATMENT OF ATONIC IMPOTENCE.

The treatment of these cases must be both general and local. The sleep, diet, exercise and general

hygiene of the patient must be carefully regulated. While under treatment, sexual relations must be strictly interdicted with very few exceptions. The patient should be particularly cautioned against making an occasional secret trial to discover whether or not he is gaining strength.

Fissure, hemorrhoids or other pathological conditions about the rectum should receive prompt attention. If varicocele is present, it should be cured by operation, or an appropriate suspensory bandage should be ordered. A redundant prepuce would call for circumcision; a narrow meatus for meatotomy.

All sexual excitement should be avoided with the utmost care, and if the thoughts irresistibly run in this direction, vigorous exercise and cold bathing should be ordered. The urine should be rendered bland and unirritating, and when it contains excess of phosphates, oxalates, urates, uric acid, etc., appropriate dietetic and medicinal treatment must be ordered.

The local treatment consists in the dilatation of strictures; the healing of granular patches of the anterior urethra by means of direct applications through the endoscope; the curing of hyperæmic and inflammatory conditions of the posterior urethra by irrigations and instillations, and the passage of full sized cold steel sounds, or by the use of the psychrophor.

The sound (Fig. 1) should be introduced every third or fourth day, and should be allowed to remain in for

fifteen minutes. In some cases the prostatic urethra is so exquisitely sensitive that the introduction of the sound occasions a distinct nervous shock. Very exceptionally the whole urethra exhibits hyperæsthesia. This may be overcome by first injecting a one per cent. solution of cocaine into the anterior urethra. An instillator can then be carried down to the membranous urethra, its tip inserted just within the grasp of the compressor urethræ muscle, and ten drops of a one per cent. solution of cocaine can be driven into the membranous and prostatic urethra. The introduction of the sound will then be almost painless.

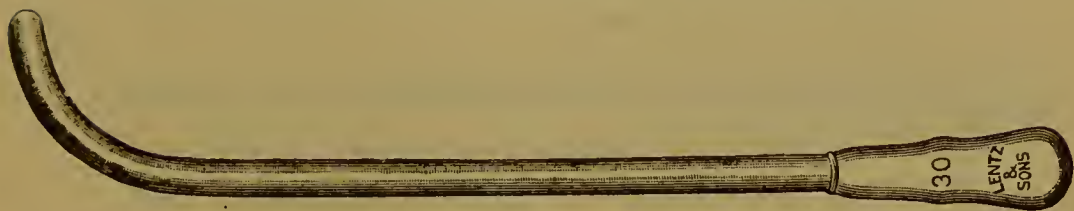


FIG. 1.—Steel Sound.

When there are distinct evidences of a catarrhal condition of the posterior urethra, irrigation and instillation will usually be required before a cure is accomplished, though in many cases, particularly those dependent on stricture, the use of the sound is sufficient.

Irrigation is best practised by means of a small (No. 10 F.) soft rubber catheter. This is attached to a fountain syringe which contains the lotion to be used, is lubricated with antisepticized glycerine, and

is passed into the bladder. The stream is then started, and the catheter is slowly withdrawn, thus flushing out the entire urethra. The solutions which give the best results are: nitrate of silver, 1:6000 to 10,000; sulpho-carbolate of zinc, 1:1000 to 3000; permanganate of potassium, 1:1000 to 3000; permanganate of zinc, 1:3000 to 6000; bichloride of mercury, 1:10,000. The efficacy of these lotions is increased by administering them as hot as can be borne. Such an irrigation should precede the passage of the sound, particularly in the cases where examination of the urine shows that pus is freely secreted from the prostatic urethra.

After the passage of the sound, instillations should be practised. These act directly upon the inflamed area, promoting healing, and subduing the hyperæsthesia of the terminal nerve filaments of the vesicoprostatic plexus.

Instillations are made by means of a catheter, to which is attached a small syringe (Fig. 2). The catheter part of the instrument should be *cylindrical*, not conical, it should not be longer than seven inches, and its lumen should be very small. A hard rubber tube thus constructed with a short terminal curve and firmly attached by its shaft to an ordinary hypodermic syringe will answer every purpose.

The medication which is to be employed, is sucked up through the tube; the latter is lubricated with antisepticized glycerine, and is introduced till its

point has just been grasped by the compressor urethræ muscle. This can be known by the slight, often sudden, sense of yielding, which is felt after a moment's steady pressure when the instrument stops at the anterior layer of the triangular ligament. The piston of the syringe is now driven down, and the instrument is withdrawn.

If the application is made properly, not a single drop should escape into the anterior urethra. It is important that this should not take place, since solutions are commonly used for instillation so strong

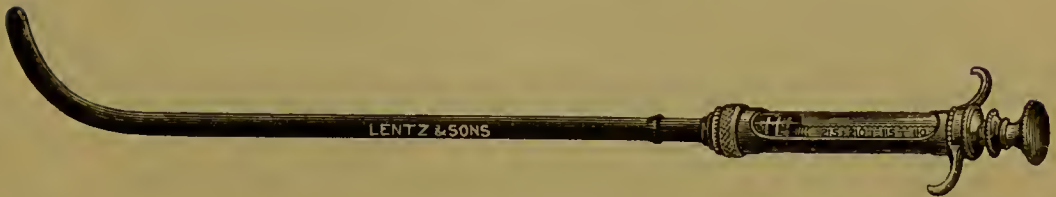


FIG. 2.—Instillator.

that undue inflammatory action would be excited by their contact with the anterior urethra.

The quantity injected each time is ten to twenty drops, and the instillations are best made when the bladder is neither full nor entirely empty. Of the solutions employed, nitrate of silver is by all odds the most efficient, especially in cases dependent on gonorrhœal inflammation. Sulphate of copper, sulpho-carbolate of zinc, iodine and carbolic acid may also be used. If nitrate of silver is employed, ten drops of a one per cent. solution are first thrown in; the strength of the application is increased by one per cent. each

treatment, till it reaches the strength of ten per cent. Copper sulphate and zinc sulfo-carbolate are used in the same strength. In extremely obstinate cases five drops of a mixture of equal parts of iodine and carbolic acid will be found serviceable. If these injections occasion local symptoms of excessive inflammatory reaction, such as pain and continued vesical tenesmus, the strength of the application must not be increased too rapidly. In many cases it will be well not to use solutions of a greater strength than five per cent. When the immediate effect of the injection is to occasion almost unbearable pain, an instillation of cocaine should precede the application of the more powerful drug. If a super-sensitive condition of the anterior urethra is present, this may be combatted by means of irrigations of silver nitrate, beginning with a solution of the strength of 1:6000, and running it up to 1:3000.

If in spite of the passage of sounds, tender spots, the discharge of blood after instrumentation, and a more or less chronic discharge, denote the presence of ulcerating spots in the anterior urethra, these should be treated by direct applications of a ten per cent. solution of nitrate of silver. This can only be accomplished by means of the urethroscope. The Otis pattern is the cheapest and the best.

Heat—Cold.—In some cases the hyperæsthesia is best combatted by the prolonged application of cold. This is accomplished by the psychrophor (Fig. 3).

This instrument may be kept at a low temperature for as long a time as is desired by means of a stream of water constantly flowing through it. The portion of the tube passing through the anterior urethra is not made cold by the liquid which is allowed to flow through, since the latter comes in contact with the external walls of the instrument only in its terminal three inches. This instrument should be as large as

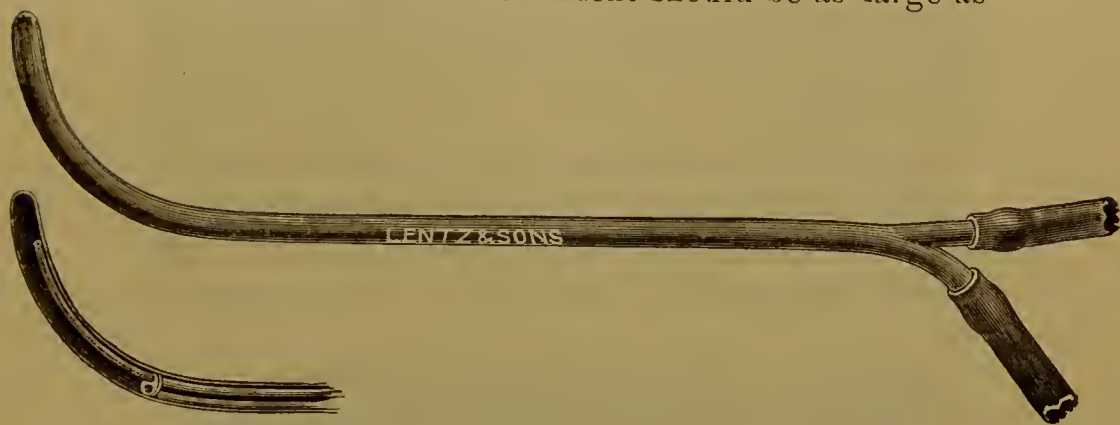


FIG. 3.—Psychrophor.

can be passed into the urethra without undue stretching. It is introduced until its curved extremity occupies the membranous and prostatic urethra. A current of cold or hot water is then allowed to pass slowly through the psychrophor, thus maintaining the chamber at its curved end at about the temperature of the water. This instrument is used once every other day for fifteen to thirty minutes, unless it occasions great pain, in which case it may be removed

sooner, and the intervals between each application may be lengthened.

In cases of atonic impotence characterized by oversensitiveness to the introduction of the sound, and by premature ejaculations, but without free pus secretion, the passage of cold water through the psychrophor is particularly serviceable. In the paralytic cases, where the posterior urethra is less sensitive than normal, and where erections are feeble or altogether lacking, prolonged hot applications will be found more efficient.

The prostatic urethra can also be made to experience the beneficial influence of heat or cold, by applying these remedial agents through the rectum. Many of these cases experience marked benefit from the



FIG. 4.—Rectal Irrigator.

use of a rectal douche (Fig. 4); cold in hyperæsthetic cases, or hot where the paralytic stage of the disease is pronounced. The rectal douche is best applied by means of a two-way injecting pipe, which allows the water to flow out as fast as it enters. This douche should be employed once a day, a forcible stream being turned directly against the prostate.

Another excellent way of applying heat or cold through the rectum is by the use of the rectal bag. This is constructed very much on the principle of a Barnes' bag, or rather the bag employed for elevation of the bladder in the supra-pubic operation of cystotomy. It is introduced into the rectum and filled with either cold or hot water in accordance with the special indications of the case. This may be worn for from thirty minutes to two hours at a time, and may be daily employed during the early part of the treatment.

When the impotence persists after urethral inflammation or hyperæsthesia has been completely subdued, other methods of treatment must be employed to restore power to the weakened centres and to the muscles concerned in erection and ejaculation. The alternate cold and hot needle spray applied to the genitalia, the perineum, the hypogastric region, the buttocks, the inner surfaces of the thighs, and the lumbar spine, acts as a powerful stimulant to the lumbar centres. It should be applied once daily, preferably in the morning, and should be continued for from two to five minutes.

Wet packs, sitz baths, in fact a complete hydro-pathic course will sometimes accomplish a cure, but more from improvement in the general health than from any special local action.

Electricity is one of the most powerful means of stimulating the fagged lumbar centres. It may be

applied in a variety of ways, and we have yet no clear knowledge on the basis of which we can predict what form of application will be followed by the best results in a given case. Either the galvanic or faradic current may be employed. It should first be passed the length of the spine, then should be used locally. In its local use one pole, the positive, is placed over the lumbar spine, the other to the perineum, the hypogastric region, the anus, or the prostatic urethra. The electric brush is exceedingly valuable; it should be swept over the external genitalia, the hypogastric region, the perineum, buttocks and inner surfaces of the thighs, in fact the regions innervated by the nerves which communicate with the hypogastric plexus, and thus with the erection and ejaculation centres.



FIG. 5.—Rectal Electrode.

The rectal electrode (see Fig. 5) finds its application in those cases of atonic impotence, in which the erections are feeble or absent, and the semen dribbles out in place of being ejaculated. The sponge of the positive pole is in this case placed on the perineum, and the entire perineal group of muscles is excited to vigorous contraction by means of the electrode introduced into the rectum. The part these muscles play

in erection has been shown already. I prefer the slowly interrupted faradic current for use in this way. The application should last 15 minutes, and should be repeated every other day.

By the urethral electrode (Fig. 6) the current is applied directly to the prostatic urethra and its associated muscular fibres. In this case both the faradic and galvanic current may be employed. The latter should however never be of such strength as to produce a destructive action.



FIG. 6.—Urethral Electrode.

Whether it be the psychological effect of electrical apparatus and application, or the tonic influence of the current, I cannot say; but it remains true, that, excepting the results from the direct treatment of demonstrable lesions, the percentage of cures of impotence from the use of electricity is greater than that from the use of any other single remedy.

As an instance of the effect of electricity the following case is cited:

A. B., a man of leisure, aged 43, masturbated but once in his life, and that at the age of fifteen. He was never excessive in his sexual indulgence, and never had venereal disease. He married at the age of twenty-five, and begat healthy children. From the twenty-fifth to the thirty-fifth year, he practised intercourse on an average of once or twice a week.

From the thirty-fifth to the fortieth year he was even more abstemious, the intervals between intercourse being considerably longer, this being necessitated by his wife's failing health. In the last year of her life, he abstained from intercourse entirely, though previous to this time he had experienced no diminution in either sexual appetite or power. For a year after her death he continued faithful to her memory; he was then exposed to temptation and yielded. He had what seemed to be a vigorous erection, but ejaculation occurred even before contact. The erection at once subsided. Repeated efforts were followed by a like result. The patient shortly drifted into a condition of the most profound hypochondriasis, complained of languor, feebleness, headache, vertigo, lumbar and hypogastric pains radiating down the thighs, constipation, and the general train of symptoms from which such patients suffer. He sank into a condition of almost utter despair, meditated suicide, and considered all treatment quite futile to help him.

Examination showed his organs to be healthy; his urine normal and his sexual organs without disease. His penis was somewhat undersized— $2\frac{3}{4}$ inches in circumference—but admitted a 28 sound without the slightest trouble. The prostatic urethra was unduly sensitive. Examination through the rectum showed a prostate normal in size. The urine contained no pus, and the few shreds found in it were entirely made up of mucus.

For several weeks the cold sound was passed at intervals of three days, and every six days ten drops of a one per cent. solution of silver nitrate were injected into the prostatic urethra. The diet, sleep, exercise and all conditions of life were most carefully regulated. In two months he had greatly improved in general health, and the erection was entirely normal. Directly against the cautions given him, he now tried his sexual powers and was shocked to find that he was even more impotent than before. Erection failed him entirely, though during the last two weeks of his treatment he had the morning priapism. Strychnia, grain $\frac{1}{20}$, with phosphorus, grain $\frac{1}{100}$, were administered three times a day; hot rectal douches were ordered, two quarts of water to be forcibly injected against the prostate once a day. In addition he was told to use for three minutes every morning a cold and hot needle spray directed particularly against the genitalia. Under this treatment sexual power was markedly strengthened. After six weeks another trial of strength was to him at least encouraging, but not satisfactory. He then went to a health resort in the mountains and placed himself in the hands of a physician, who pursued a vigorous tonic and hydropathic treatment, supplemented by injections of spermine. After several months he returned to the city but little better than when he left. Strychnia and arsenic were now administered, $\frac{1}{20}$ of the former and $\frac{1}{30}$ of the latter

three times a day, and the patient was given the electric current, galvanic and faradic, the poles being applied to the lumbar spine and to the rectum. Under this, his improvement was rapid and marked. He believed that the electricity helped him more than other measures. After some weeks he was able to have connection with almost his pristine vigor, repeating the act several times in a night. He cast off all his morbid and melancholy forebodings; picked up in weight, became again a cheerful, active member of society, took to himself a wife, and showed, by subsequent events, that he was both potent and fertile.

PROSTATORRHOEA.

The term prostaticorrhœa is applied to the intermittent oozing of the secretion of the prostate gland from the urinary meatus. Although this is merely a symptom of catarrh of the posterior urethra, it is so characteristic of a large class of sexual neurasthenics, that it merits detailed consideration. The running is greater after micturition and during defecation. Some drops of it can be made to flow by digital pressure on the prostate through the rectum. It is like white of egg in appearance, or may be somewhat more milky. Microscopic examination shows that it is made up of leucocytes, cylindrical epithelium, concentric amyloid concretions, and Böttcher's sperm crystals. These sperm crystals are quickly formed by adding to the discharge a one per cent. solution of ammonium phosphate and drying on an object-glass. Occasionally blood is found, but this is nearly always due to involvement of the seminal vesicles.

This discharge is nearly always associated with marked sexual neurasthenia. It depends for its existence upon a chronic catarrh of the prostatic urethra, including the sinuses, ducts and follicles. The examining finger in the rectum usually shows no enlargement of the organ; not infrequently, however, distinct nodular indurations can be felt in the inflamed follicles.

The hyper-secretion is constant, but does not flow steadily from the meatus, because this is prevented by the tonic contraction of the compressor urethræ muscle. When this muscle is weakened, or when its resistance is overcome, as by the passage of hardened fæces through the rectum, the discharge will then flow forward.

The patient always regards this discharge as semen, and suffers from the psychical effects which reading or hearsay has led him to believe are appropriate to such a condition.

Since prostatorrhœa is dependent upon a chronic catarrh of the prostatic urethra, its causes can be traced to whatever brings about such catarrh. Of these, gonorrhœa, masturbation and prolonged and ungratified sexual desire undoubtedly are most common. Among others occasionally encountered may be mentioned acute congestion dependent upon cold; direct traumatism; infection as by the passage of a dirty sound; the ingestion of certain irritating substances, such as turpentine or cantharides, or the presence of a diathesis, such as rheumatism, which may render the urine irritating.

In the gonorrhœal cases particularly, the pus corpuscles are fairly abundant. Very few spermatozoa are found. If many are present constantly, the condition is rather one of spermatorrhœa.

The clinical symptoms of prostatorrhœa are fairly characteristic. There is a typical discharge—in sim-

ple catarrhal cases unaccompanied by pain; in inflammatory cases, that is those approaching in type follicular prostatitis, accompanied by pain in the deep urethra, with tenderness in the perineum and sometimes the appearance of blood after urination.

The persistent discharge is usually associated with marked change in temperament and bodily vigor.

Those unfortunates, the subjects of prostatorrhœa, may suffer from any or all of the neuroses discussed under the heading of atonic impotence. The local symptoms beyond the discharge are commonly limited to a sensation of liquid trickling along the canal; tickling sensations far back; frequent urination and some urgency in performing the act; reflex pains and aches in the rectum, the hypogastrium, the small of the back, and down the inner surface of both thighs. All these pains are greatly aggravated by prolonged standing, and are usually associated with a distinct lessening of sexual power, so that emissions are premature, erections are feeble, or even may be quite wanting at the critical time. In some cases, beyond the prostatic discharge, there are no symptoms.

A fairly typical history of a case of prostatorrhœa is as follows:

A. B., aged 18, student, was always healthy, and had a good family history; never had venereal disease and was chaste in his conduct with the opposite sex. From the thirteenth to the sixteenth year he masturbated. He then stopped entirely. For one

year he has been much worried about the condition of his penis. He thinks it is too small; feels running sensations through it at times; has not the power of forcibly expressing the last few drops of urine, so that there is some dribbling, and has nocturnal pollutions about twice a month. He states that for some months there has been, after the end of each urination a sticky, transparent drop, which hangs to the meatus. This drop also appears after straining at stools. He suffers from occasional pains in the back, over the hypogastrium and down the inner surface of the thighs. He passes water four times a day, and rises once in the early morning to do this. Sometimes he passes it more frequently, and suffers from urgency. Before the beginning of his local troubles he was exposed to prolonged, ungratified sexual excitement.

The patient has not had normal erections lately, but experienced normal desires for women, and on appropriate stimulation had violent erection. He complains of loss of memory, dull, heavy feelings and a constant sense of fatigue. His mental suffering was accentuated by the fact, that he fancied the flaccid penis should be about as movable in the normal person, as is the tail in the dog, and that he was suffering from paralysis.

Examination of the urethra showed the absence of stricture, but an excessively sensitive posterior urethra. Rectal examination showed a prostate normal

in size and slightly lobulated. Pressure upon the gland caused several drops of prostatic fluid to flow from the meatus. Microscopic examination of this showed the typical discharge containing the concentric amyloid bodies, without admixture either of pus or spermatozoa.

After some weeks treatment by means of the cold sound and instillations of weak solutions of nitrate of silver, this patient entirely recovered. He no longer had discharge of any fluid, was able to ride horseback without experiencing any return of his trouble, and appeared quite normal in every way, resuming his work with what was to him new vigor.

The prognosis of prostaticorrhœa is as a rule very good. The cases which present themselves are usually derived from three classes:

1. Those suffering from the remains of an uncured gonorrhœa. These represent mostly city men of loose morals;

2. Men who have been the subjects of prolonged ungratified sexual desire. These usually represent countrymen, who, from reasons founded on morality or from fear, resist, but do not flee temptation;

3. Half-grown or grown boys, who have been given to inordinate masturbation, to lascivious reading and to long brooding on sexual subjects. These are drawn from either the city or country, are usually of medium intelligence, often have in them germs of disease such as tuberculosis, hereditary syphilis, etc.

Patients belonging to the first two classes are cured with but few exceptions, provided they can spare the time necessary for treatment, and exert the self-control required by strict observance of the orders given them.

Patients of the third class, though younger in years, and hence *a priori* easier to cure, often do not yield to treatment. This is probably because their habit has such a hold upon them, that they cannot overcome it, and because, being usually of weak constitution, their recuperative power is slight. I am certain that I have seen some of these cases distinctly aggravated by vigorous treatment; each application or mechanical interference acting as a shock to the enfeebled constitution, from which reaction was slow and imperfect.

Treatment.—Since the underlying lesion in these cases is catarrh of the mucous membrane of the prostatic urethra, this catarrh extending into the ducts and glands, the treatment of prime importance is that directed to the subduing of such catarrh.

Several times I have seen a prostatorrhœa of long standing cured, by the observance of general hygienic rules, and the ingestion of food and medicine calculated to correct an abnormal condition of the urine.

The bowels must be opened regularly; fluid extract of cascara, or better than this a teaspoonful of sulphate of magnesia in a quarter of a glass of water, or a claret glass of hunyadi on rising in the morning, will be found serviceable.

The bathing must be regulated. Where the patients are vigorous and cold water suits them, showers or a plunge in the morning may be recommended. If the patients are feeble, a hot plunge bath is advisable.

Exercise must be prescribed. In some cases bicycle riding or horseback exercise distinctly aggravates the condition. This is particularly the case, when there is a low grade of follicular prostatitis; that is, when in addition to the catarrhal process the parenchyma of the gland is more or less involved. In other cases such exercise is particularly serviceable, producing on the prostate the effect of massage, increasing the tonicity of its blood vessels and materially lessening the quantity of discharge.

Stimulants must be tabooed except at meals, and then they should be taken in moderation.

The clothing must be regulated in accordance with the weather, and the feet must be protected from the damp, since chilling of the surface exerts a particularly bad effect upon inflammations about the neck of the bladder.

Medical treatment, though of minor importance, should not be neglected. Among the most useful drugs are those which in their elimination stimulate the prostatic mucous membrane. Oil of sandalwood has seemed to me more valuable in its effects than all the other remedies of this class. It may be given encapsulated, in ten-minim doses three times a day, one hour after each meal. Cubebs, copaiba, turpen-

tine, cantharides in small doses, all have been highly recommended; belladonna is serviceable where there is irritability of the bladder; indeed it and its alkaloid atropia are held in high esteem by those most experienced in this class of cases. Bromide of potassium frequently is most useful, particularly where there is intense hyperæsthesia, and where general neurasthenia is well marked. As general tonics the compound syrup of the hypophosphites in teaspoonful doses, cod-liver oil with iodide of iron, and iron and nux vomica in combination are to be recommended.

The local treatment is the one on which main dependence must be placed. This is designed to cure catarrh and to allay hyperæsthesia. The various methods of treatment have been already described under Atonic Impotence.

The use of *soluble prostatic bougies* has not given me as satisfactory results as have instillations. If bougies are employed, the more strongly astringent ones are to be preferred. Each bougie may contain some such prescription as this: Zinc sulphate, grains ii; carbolic acid, grains ii; fluid extract of hydrastis, m xv. These bougies are introduced by means of a special carrier, and are perhaps most useful, when the patient is himself compelled to continue his treatment.

Occasionally the *prostatic dilator* (Fig. 7) will be of service. It has seemed to me to accomplish its good

effect by mechanically emptying the diseased follicles of their contents, and thus allowing the instillation, which should always follow the dilatation, to gain access to every part of the mucous membrane. This is a means of treatment which should not be repeated more than once in ten days, and which should be practised with caution. Stretching should not be less than 36 of the French scale, nor more than 44. Full dilatation of the prostatic urethra by means of the steel sound is impossible, since an instrument sufficiently large to overstretch the membranous urethra, fits loosely in the physiologically wider prostatic portion of the tube.

Gross and others hold that flying blisters to the perineum are extremely valuable. Personally I have never seen marked beneficial effects follow their use. They often occasion considerable inconvenience or even actual suffering.

Electricity is often of service. The proper current for any individual case cannot be formulated. The galvanic current, one pole applied to the lumbar spine, the other to the prostatic urethra by means of a properly ar-

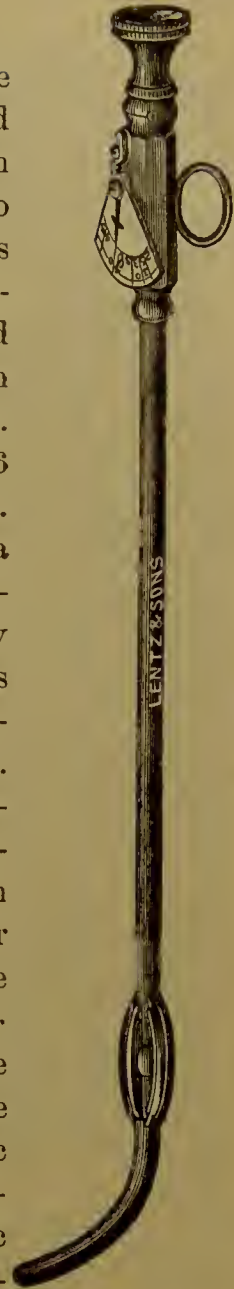


FIG. 7.—Prostatic Dilator.

ranged urethral electrode, is perhaps most popular. I have, however, in some cases, particularly in those where coincident with prostatorrhœa there was a very marked failure of sexual power, seen much more rapid effects from the faradic current.

In nearly all cases sexual intercourse must be interdicted. When the disease occurs as the result of over-indulgence upon the part of married men, after a brief period of abstinence moderate intercourse may be allowed, since total prohibition may keep the patient in a condition of prolonged and ungratified sexual excitement. This, however, must be determined by the effect produced by intercourse. If this aggravates the discharge, and particularly if it is followed by lassitude and lumbar pains, it must be forbidden absolutely.

In the majority of cases recovery will follow in from one to three months; sometimes a much longer period is required.

In some cases local treatment appears to be distinctly aggravating. Here it is advisable, if the patient's circumstances are such as to allow it, to make a complete change in the mode of life. A prolonged vacation spent in travel or in camping out, or on a shooting expedition will sometimes cure a case which has obstinately resisted local and general treatment.

INVOLUNTARY SEMINAL EMISSIONS.

Involuntary seminal emissions, though properly classed with the symptoms of atonic impotence, assume such an importance in the eyes of patients, and appear in such varying clinical forms that they require detailed consideration.

Cases suffering from seminal emissions will complain of symptoms corresponding to the following classification:

1. *Nocturnal pollution*, the result of lascivious dreams, or a local hyperæsthesia so marked, that stimuli too feeble to produce any effect in health are sufficient to excite ejaculation of semen. Usually attended with vigorous erection and voluptuous sensation.

2. *Diurnal pollution*, the result of impure thoughts or of a peripheral irritation too feeble to excite emission in a healthy man. Usually attended with feeble erection or at least one which quickly subsides, and with blunted voluptuous sensation.

3. *Spermatorrhœa*, a condition in which the semen oozes from the meatus without erection, and without pleasurable sensation. This loss may be due to impure thoughts, or may occur quite independently of appreciable psychical or physical stimulus. The discharge flowing as in prostatorrhœa after micturition and during defecation.

Nocturnal pollution.—An occasional emission during sleep, once every two weeks for instance, is, in a

continent men, no sign of undue irritability of the sexual organs. Indeed it is rather to be desired, since it disposes of an accumulated secretion the presence of which is liable to excite disturbing reflexes. In healthy young men who lead idle lives and who are subjected to venereal excitement, these pollutions may occur much more frequently, two or three times a week, and yet indicate no abnormal local condition. It is not uncommon to find healthy men who have no pollution for many weeks; yet after prolonged physical exertion such as is required in an all-day hunt, or a long walk, or without apparent cause, they may have several emissions in a single night. Those who work hard, who sleep and eat sparingly, and who are not exposed to sexual excitement, may be continent for months or years without a single emission.

Nocturnal pollutions can only be considered as indications of seminal weakness when they are unduly frequent, are followed by lassitude and mental depression, and particularly when they are associated with partial or complete impotence.

If such emissions persistently occur three or four times a week, when the surroundings of the patient are such that he is not exposed to prolonged sexual excitement, and if there is a lessening of physical strength, a sense of fatigue, a disinclination for mental effort, it is quite certain that there is an asthenic condition of the ejaculation centre brought about reflexly or dependent upon systemic causes.

These unduly frequent nocturnal pollutions are often associated with full sexual vigor. If uncorrected, however, the erethism of the ejaculatory centre becomes more marked, and there is developed a more or less pronounced form of sexual weakness.

Diurnal pollutions, or ejaculations as a result of slight psychical or local stimulation, may occur from embracing a woman or even being in the same room with her, from friction of the garments incident to horse-back riding, from the titillation of a shower bath. Indeed, any slight irritation applied to the penis, may be sufficient to excite immediate ejaculation. I saw one man in whom the act of retracting the prepuce for the purpose of cleanliness invariably excited ejaculation; the passage of a meatus bougie caused the same result. In another case a digital examination of enlarged inguinal glands was sufficient to excite an erection and ejaculation. The reading of lascivious literature, the hearing of lewd stories, or the simple imaginings of sexual relations are sufficient to excite an orgasm. The erections when this condition of erethism is developed, are usually feeble, exceptionally they are vigorous, but subside promptly when emission has taken place.

Spermatorrhœa.—The erection and emission centres, though distinct from each other, are so closely related physiologically, that erethism and adynamia of one imply a like condition of the other; hence in the most aggravated form of sexual weakness, the semen

is discharged without pleasurable sensation and without erection, oozing from the urethra, instead of being ejaculated by rhythmic muscular contraction. This oozing may occur as a result of sexual excitement or local irritation. The sight of a woman may cause it, or it may be due to the jolting of a wagon or to intentional friction. The following case sent me from the country well illustrates this phase of seminal weakness.

A. B., æt. 26, masturbated furiously when sixteen years of age; this he continued for one year, then stopped entirely. Following his excess in this direction, he was troubled with frequent nocturnal pollutions, three or four a week. This continued for some years, when he began to notice that attempts at intercourse were not satisfactory, erection was imperfect and ejaculation premature. In the last year seeing or touching a lewd woman at once excited an emission, unattended with pleasurable sensations and without erection. There was no discharge from the penis after urination or defecation, no stricture, nothing abnormal except a very small penis. He stated that his morning erections were vigorous. This last statement in regard to the morning erection, if true, offers an exception to the general rule, for as such cases belong to the paralytic type, the erection centre and the muscles innervated by it, and the plexuses anastomosing with it, are too much exhausted to react fully to the irritation of a full bladder.

This patient under rectal douches, bougies, posterior instillations and tonic treatment, recovered sufficiently to break through the strict order in regard to chastity and fornicate repeatedly. This act he was able to accomplish, but from constant trials of his strength did not regain full power, and finally disappeared.

Spermatorrhœa, in the sense of a constant flow of semen from the urethra after urination, during defecation, and at odd times, spermatozoa also being found in the urine, is very rare. Exceptionally a vigorous man, who has been given to masturbation, or excessive fornication, and who stops suddenly, will, in place of frequent nocturnal pollutions, be troubled with mucous discharge, which on examination will be found to contain many spermatozoa; this represents an overflow from the seminal vesicles due, no doubt, to temporary paresis of the muscular fibres of their ejaculatory ducts. It is, however, not associated with loss of virile power, and though observed in those who exhibit a mild degree of sexual hypochondriasis, it is a condition which under appropriate treatment promptly subsides. I have seen but one case of true spermatorrhœa. This was as follows:

A. B., clerk, aged thirty-two, addicted to masturbation for twelve years; has never had connection with a woman and feels for women no natural desires. During the last two years he has had a constant running from the penis, aggravated on urination and

defecation. He has frequent nocturnal pollutions; these do not wake him, and he is only aware of them from finding the stains on his garments. During defecation (especially if he is slightly constipated) the discharge is pronounced, has a seminal odor, and slightly pleasurable sensations are experienced during its flow. This discharge runs from the penis in drops without erection. Four years ago the patient noticed that morning erections were absent and priapism did not result from libidinous thoughts. Later, in the last two years, libidinous thoughts caused running of sperm-like fluid from the penis without marked pleasurable sensations. For the last year he has had no erection. Friction of the glands produced discharge of a whitish fluid.

The patient was in appearance a typical masturbator. He was small, emaciated, hollow-chested thin-necked, weak-kneed, shambling in his gait, careless in his dress and person. In his deep-set eyes rested the shadow of despair. His pale, hollow cheeks, and general expression of moral abasement, were sufficiently indicative of the practice which had brought him to his condition. His penis and testicles were unusually small. The penis was cold, shriveled and almost cartilaginous in its density. Examination of his urine showed large quantities of spermatozoa and oxalates in abundance. The fluid discharged during stool and after urination was swarming with spermatozoa. He complained of all

the various reflexes with which these patients are afflicted, headache, loss of memory, tinnitus aurium, bad taste in the mouth, wind on the stomach, obstinate constipation, palpitation of the heart, shortness of breath, colicky pains, backache, uncontrollable restlessness, pains in the hypogastrium running down the thighs, burning in the anus, etc. Application of the *porte caustique* to his prostatic urethra stopped his discharge.

He was lost sight of, however, before any return of sexual power was noted.

The causes of involuntary seminal emissions are the same as those which excite catarrh of the posterior urethra and prostatorrhœa. The lesion produced is in the first place hyperæmia or inflammation of the prostatic urethra. This leads to hypersensitiveness of the erectile and ejaculatory centres, followed by adynama, or exhaustion. Of the most frequent causes may be mentioned prolonged and ungratified sexual excitement, masturbation and sexual excess, gonorrhœal inflammation, exhaustion from overwork, anxiety or grief; or from constitutional conditions, such as acute fevers or consumption in its early stages; organic lesions of the central nervous system, such as are observed in bulbar paralysis; the abuse of drugs, such as alcohol and opium; reflex irritation from the penis, such as that due to phimosis or herpes of the prepuce, or narrow meatus; reflexes from the anus and rectum, such as are dependent on fissures, piles,

polypi, or irritation incident to worms or to skin eruptions or obstinate constipation.

The diagnosis of spermatorrhœa must be founded on microscopic examination. If the sperm-like discharge, which flows during defecation, after urination and at other times, on repeated examination is found to contain a few spermatozoa, never in great numbers, it may be concluded that the case is one of prostatorrhœa. If, however, spermatozoa are very numerous in this discharge, and are nearly always found, the case is one of spermatorrhœa. However, the differential diagnosis is not very important, since the treatment of the aggravated forms of both affections is much the same.

The prognosis in these cases is fairly good, when there is no organic lesion of the central nervous system, and when the patient still possesses determination enough to help the physician. Some cases improve rapidly under very simple treatment, particularly that directed to subduing the hypersensitiveness of the prostatic urethra. Others, however, yield not at all. In these cases it is possible that the centres are permanently injured or that changes have taken place in the secreting and excreting apparatus too gross to be repaired.

The treatment of nocturnal pollutions must be partly psychical. The great majority of patients consulting physicians in regard to this condition, have in reality emissions no oftener than are consis-

tent with perfect health. From reading misleading literature; however, the patient fancies that the loss is producing a disastrous drain on his system, and is apt to suffer from symptoms which he judges would be commensurate with this loss. The physiology of such pollutions should be clearly explained; the life should be regulated according to hygienic principles; the patient should be cautioned against thoughts of a libidinous nature, against everything which is liable to cause sexual excitement. He should have his bowels opened at night before retiring, either by cold enema, or by means of salts taken during the day, until the habit of evacuation at this time is acquired. He should sleep on a rather hard bed, lightly covered. He should avoid sleeping on his back, and this may be managed by securing a band about the waist containing a block so placed that it presses on the spine when the patient assumes the dorsal decubitus; thus sleep is disturbed. Furthermore the patient should train himself to wake once during the night and empty his bladder, and before retiring practise light calisthenic exercises and take a cold or cool sponge bath.

When, in spite of these precautions, erections and emissions occur, the patient should adjust a ring to the penis, so arranged, that when this organ becomes congested, the sharp teeth with which the outer band is set around press upon the skin and disturb sleep. (See Fig. 8.)

All sources of reflex irritation must be carefully sought for and removed; thus the rectum should be examined for fissure and hemorrhoids. The possibility of ascarides must be considered. In cases of phimosis, circumcision should be performed. Narrowings of the meatus must be cut; strictures further back must be divided or dilated; hyperæsthesia or hyperæmia of the prostatic urethra must receive the treatment described in discussing atonic impotence. Varicocele or hydrocele, if present, should be cured.

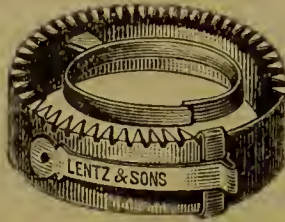


FIG. 8.—Pollution Ring.

Though the local treatment is perhaps of prime importance, general treatment must not be neglected. When the nocturnal pollutions are very frequent, bromide should be administered in full doses, 30 to 90 grains at bed-time. Bartholow particularly recommends the mixture of this drug with the fluid extract of gelsemium in 10-drop doses. Atropine, grain $\frac{1}{300}$, three times daily with twice this quantity given at bed-time; hyoscine, grain $\frac{1}{200}$ to grain $\frac{1}{120}$ at night; lupulin, grains xx, three times a day; monobromate of camphor, warmly commended by Hare, 5 grains

in pill form three times a day; antipyrin, grains xv, three times a day. Each of these drugs may, in individual cases, serve as a powerful auxiliary in accomplishing a cure.

In the cases which have progressed to the point of diurnal pollutions, local treatment is of special importance. In addition to the posterior instillations, and the solid stick of silver nitrate applied by the

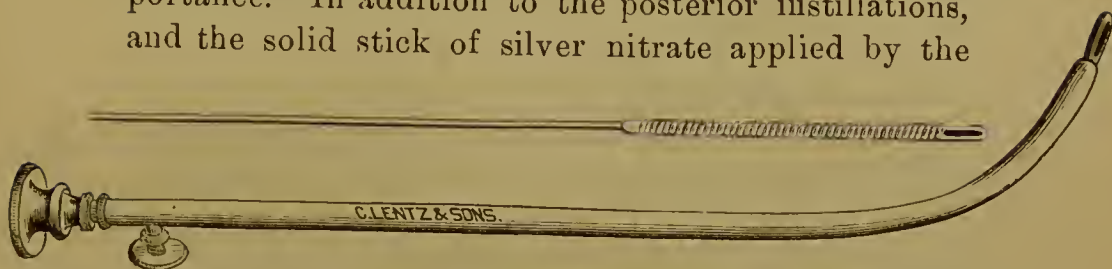


FIG. 10.—Porte Caustique.

porte caustique (Fig. 10), the patient should receive hot rectal douches, the hot and cold needle spray to the external genitalia, perineum and lumbar region, and the galvanic and faradic current over the lumbar spine, in the rectum, and in the prostatic urethra.

The first effect of electricity is to aggravate symptoms; shortly improvement sets in, and is generally marked.

Of the drugs to be employed in the paralytic form of seminal incontinence, those should be chosen, which tend to restore tone to the weakened muscles, and to revitalize the exhausted lumbar centres. Among the drugs which have been found most efficacious are the following; the dose named is that

appropriate to each administration, when the medicine is ordered to be taken three times a day: Strychnia, grain $\frac{1}{20}$ alone or in combination as found in the compound syrup of the hypophosphites a teaspoonful; fluid extract of ergot a teaspoonful; arsenious acid, grain $\frac{1}{40}$ to grain $\frac{1}{20}$; extract of damiana, grains iii to grains v a day; phosphorus, grain $\frac{1}{100}$.

IMPOTENCE OF THE FEMALE.

If we adopt the same classification as was observed in discussing impotence and sexual weakness in the male, this affection, as observed in the female, must be limited to cases of malformation either hereditary or acquired, to obstruction from new growths and to muscular spasm, since in the case of a woman performance of the sexual act, at least in so far as her partner is concerned, requires only the presence of a sufficiently long and patulous mucous canal.

From the standpoint of the woman, however, failure to experience an orgasm, after what may be regarded as sufficient mechanical stimulus, represents a common form of impotence.

Impotence in the female may be classified under the following heads:

1. Intromission of the male organ is impossible.
2. Intromission is possible, but causes extreme pain.
3. Intromission is possible, and does not occasion pain, but the mechanical and psychical stimulus is not sufficient to excite orgasm.

1. Intromission of the male organ may be impossible, because of obstructive pathological conditions of the vulva and vagina; these may be congenital or acquired.

The congenital anomalies may take the form of

absence of the vagina; extreme narrowing of this tube, or its division into two parts, each too small to allow of intromission; or the vagina may have its outlet in an abnormal position; thus it sometimes becomes continuous with the rectum.

On the part of the vulva there may be adhesions of the greater or smaller lips; there may be hypertrophy of the labiæ or clitoris, or, what is perhaps the most frequent congenital cause of obstruction to sexual relations, there may be a rigid or imperforate hymen.

Barring the absence of the vulva and vagina and the presence of an imperforate hymen, nearly all of these conditions may be brought about by injury or disease. Thus extreme atresia may result from acute inflammation; elephantiasis may cause such swelling of the labiæ that sexual approach is impossible; gangrene, or extensive ulceration, may practically close the vulva. Deformity, the result of disease, such as coxalgia or spinal disease may render approach almost impossible.

Treatment of impotence, when it depends upon congenital absence of the vulva or vagina is, of course, of little avail. In cases of narrowing, continued dilatation may bring about a cure. In at least one case where the vagina opened into the rectum, the woman became pregnant.

Rigid or imperforate hymen, adherence of the labiæ, mechanical obstruction offered by tumors can of course be relieved only by surgical operation.

2. In women with whom intromission is possible but who suffer such pain that all voluptuous sensations are abolished, there may be some demonstrable pathological condition such as inflammation or malposition, or the most careful search may fail to find the slightest sign of abnormality beyond intense hyperæsthesia.

All acute inflammation about the vulva, vagina, rectum, uterus or ovaries may render sexual approach painful. Urethral caruncles and urethritis, fissures at the neck of the bladder, hemorrhoids or rectal fissures, ulcerations or displacement of the womb, inflammation of the fallopian tubes, disease or prolapse of the ovaries, are frequently observed as causes of this condition. At least, when such lesions are cured by appropriate treatment, the pain attendant on sexual relation disappears and normal voluptuous sensations are experienced.

As a consequence of the pain excited by efforts at intromission, there sometimes occurs an involuntary tetanic spasm of the perineal muscles, termed vaginismus. This renders the sexual act extremely difficult, and sometimes makes it quite impossible, even though the male possess a vigorous erection and brutal insistence. It is observed particularly in hysterical females. Not only the sphincter vaginae and transverse perinei, but the sphincter and levator ani and also the involuntary muscles of the vagina are involved. As a result the orifice and vaginal canal tightly close, and

any attempt to overcome the muscular resistance occasions intolerable pain.

Occasionally this condition comes on after intromission is effected. In such cases it is quite possible for the male organ to be so tightly imprisoned that release is not accomplished until ether is administered to the female. Several such cases are reported in literature, and one recently occurred under the care of a medical friend.

Though this condition is usually classed among the pure neuroses, there is usually some source of irritation, which if treated relieves the condition. Rarely, hyperæsthesia of the vaginal mucous membrane seems to be the sole cause of spasm.

The treatment of these cases depends for its successful issue upon the cure of the abnormal conditions which give rise to pain and excite reflexes. A most careful examination of the entire genito-urinary tract must be made. Lesions or displacements of apparently slight moment must receive treatment. The usual cause of this condition is inflammation, often fissures at the neck of the bladder. The rectum must be explored with the speculum, and ulceration, fissures, or varicose veins must receive surgical attention. If the vaginal introitus is unduly narrow it may be overstretched under ether. A partially ruptured hymen must be divided. Finally if no lesions are discovered and if the vaginal mucous membrane is hyperæsthetic, before sexual approach a ten per cent. solution of

cocaine should be applied to this canal and its outlet by means of cotton swabs, and the whole mucous surface should be douched daily with hot boric acid solution two quarts, and should be touched once a week with a four per cent. solution of silver nitrate.

3. Even though intromission is possible and painless, it is often the case that no orgasm is experienced by the woman. It is undoubtedly true that women, as a rule, are less passionate than men, that many wives and mothers have never experienced an orgasm, that the sexual act is for them merely an expression of conjugal obedience or a means of bearing children, that in itself the whole process is unpleasant or even positively revolting. This depends, not so much upon local conditions, as upon a frigidity mainly inborn, but partly the result of education.

Many women occasionally experience an orgasm, but usually stop short of this, since their husbands are unable to continue the act for a sufficient length of time. This is sometimes the fault of the man, but more frequently is due to the slow response on the part of the woman.

In cases such as these local treatment is of little avail; the impotence can be classed as psychical, and as such must be treated by means of mental impressions. Liquor in moderation, rich food, sea air, and caresses may awaken some response, but at most a feeble one. Since sexual desire is dead, pleasure in the sexual act is not to be excited; nor is this to be

regretted, since such women make good wives, loving mothers, and are not tempted to stray in the paths which the comparatively small number of their more amorous sisters at times find too alluring.

When an orgasm is experienced only at rare intervals, because of a too hasty partner, the remedy lies in allowing longer intervals to elapse between each approach, in making such approaches gradual, and in an effort of the will on the part of the male, by means of which ejaculation may be postponed. The effect of continued efforts in this direction is truly wonderful. I have seen men who stated that they could postpone ejaculation for one or two hours, and there is a religious sect in the state of New York who train their youth so that the intercourse may be continued for many hours without ejaculation.

